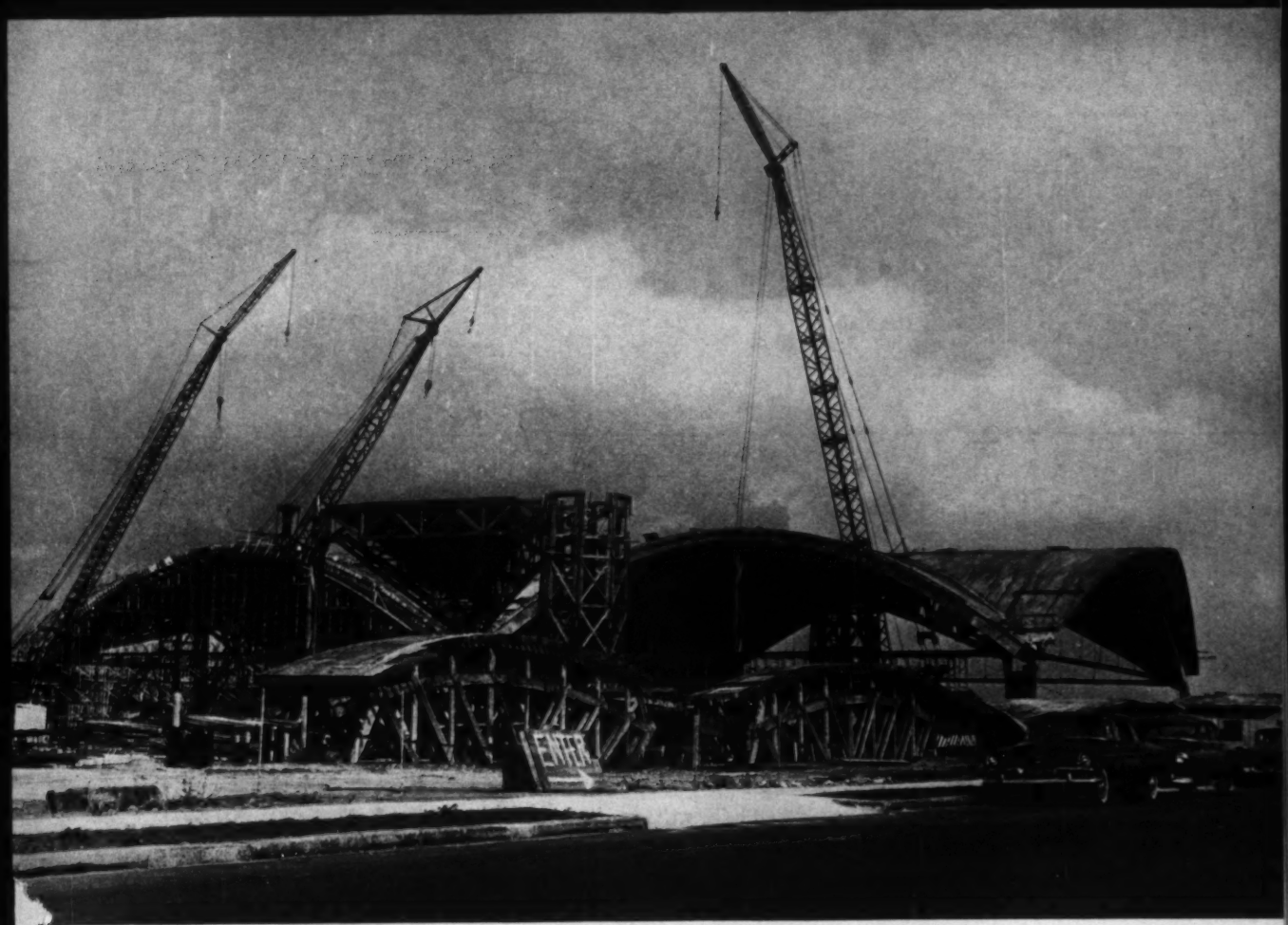
ENGINEERING NEWS-RECORD



Shells to roof automatic post office p.30

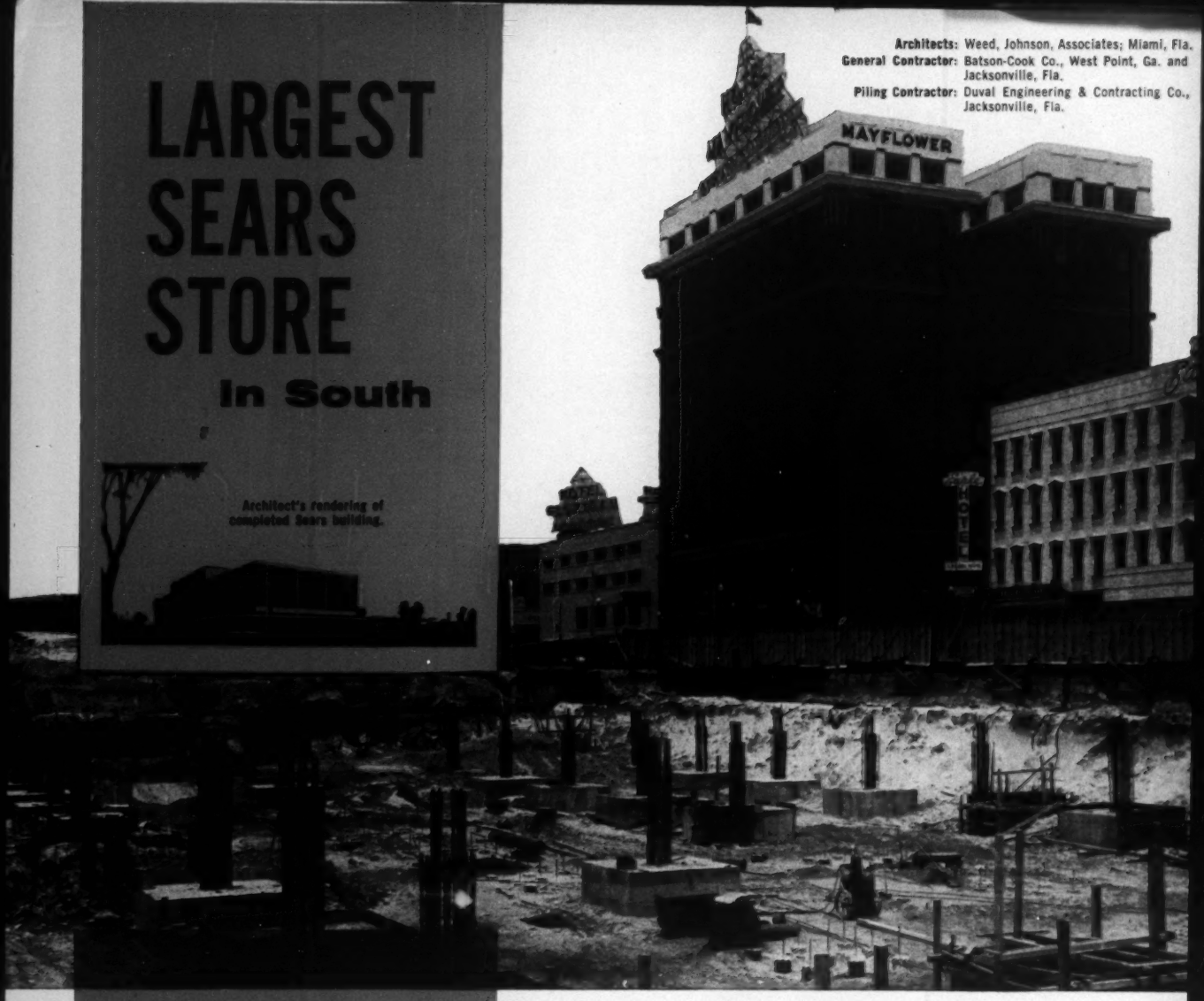
A McGRAW HILL PUBLICATION

STEVENS RICE CS N
UNIV MICROFILMS INC EDITO
313 N FIRST ST

LARGEST SEARS STORE In South

Architect's rendering of completed Sears building.

Architects: Weed, Johnson, Associates; Miami, Fla.
General Contractor: Batson-Cook Co., West Point, Ga. and Jacksonville, Fla.
Piling Contractor: Duval Engineering & Contracting Co., Jacksonville, Fla.



Supported by Armco Pile Shells

New retail store of Sears, Roebuck & Co., now being constructed in Jacksonville, Florida, will be their largest in the South, having 132,000 square feet of actual sales area.

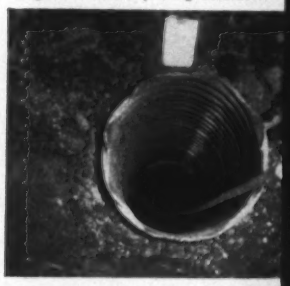
To support this building, more than 900 Armco HEL-COR® Pile Shells were mandrel-driven to specified loadings. These shells, supplied in 16 and 18 gage in 12¼-inch diameters, were driven to depths ranging from 16 to 40 feet. The foundation required 20,000 feet of pile shells.

The foundation contractor averaged 44 piles driven per 8-hour day for the entire job, using a mechanically-expanding mandrel with a driving force of 15,000 ft./lbs.

The attractive building, with an exterior of pink Roman brick, is scheduled for completion early next fall.

For more information on Armco Pile Shells, write us. Armco Drainage & Metal Products, Inc., 4680 Curtis Street, Middletown, Ohio. In Canada: Guelph, Ontario.

Looking down into mandrel-driven Hel-Cor Pile Shell at Sears site. Contractor makes visual inspection for alignment before pouring concrete.



ARMCO DRAINAGE & METAL PRODUCTS

Subsidiary of ARMCO STEEL CORPORATION

OTHER SUBSIDIARIES AND DIVISIONS: Armco Division • Sheffield Division • The National Supply Company
The Armco International Corporation • Union Wire Rope Corporation •

now at your Allis-Chalmers dealer

the ONE FORTY FIVE— OUTSTANDING VALUE IN MEDIUM-POWER GRADERS

80 hp 21,540 lb

. . . with features you can't match for the money on any grader

The new Allis-Chalmers ONE FORTY FIVE motor grader is built to outwork and outproduce any grader near its size...at a price you can't afford to overlook. An exclusive combination does it: high capacity front axle and throat clearance, big-grader power train, ROLL-AWAY moldboard, plus benefits that help an operator to do more work.

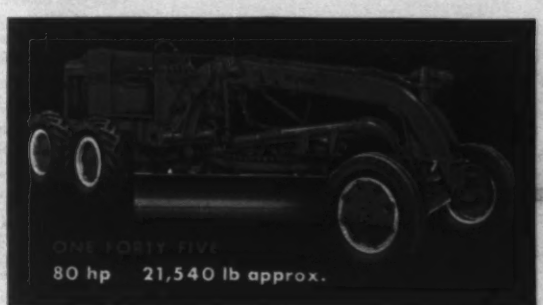
The ONE FORTY FIVE power train is built for long grading service. Simple, dry-type ceramic-lined clutch; constant-mesh transmission; heavy-duty gear train — all much stronger than you usually find in a grader this size.

Big clearance under the front axle straddles huge windrows without drag. Watch the ROLL-AWAY moldboard lift and roll the load. Check the load-clearing height from cutting edge to circle. You'll get more grading production than any other medium-sized machine can give you.

Now check these operator advantages. Platform is clean and roomy. Suspended pedals provide matchless foot room. Full visibility all around takes the strain out of operating. Toggle-type control levers allow ample road feel without wrist-snapping backlash.

Your Allis-Chalmers dealer will show you an eye-opening demonstration of the ONE FORTY FIVE. Then keep its low cost — and high performance — in mind when you're ready to buy. Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wisconsin.

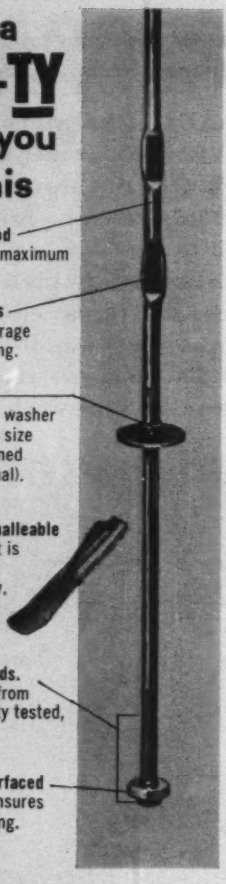
ROLL-AWAY is an Allis-Chalmers trademark.



move ahead with ALLIS-CHALMERS

...power for a growing world

only a
Snap-TY
gives you
all this



1 Full-size Rod (.225 diameter) for maximum strength.

2 Offset Type Flats for better anchorage to prevent turning.

3 Upset behind spreader washer for **positive** wall size (loose or restrained washers optional).

4 Durable, malleable iron TY-Holder that is bottom-heavy and ribbed for stability. Needs no nailing!!

5 Well-formed Heads. No interference from die marks. A quality tested, precision-built TY.

6 Uniform, flat-surfaced Head Washer that insures proper bearing.

If it is not
Richmond
it is not a
Snap-TY

Over thirty types of Snap-TYS are available—a type for every need. And all are proved, tested products with Richmond's 49 years of experience behind them.

These are the reasons why it will pay you to insist on Richmond Snap-TYS. INSIST on Richmond and BE SURE it's Richmond! Send for current Richmond Handbook which describes the full line. Write:

Richmond
SCREW ANCHOR CO., INC.
INSIST ON RICHMOND
... AND BE SURE IT'S RICHMOND!

Main Office: 816-838 LIBERTY AVE., BROOKLYN 8, N. Y.
Plants & Sales Offices: Atlanta, Georgia • Ft. Worth, Texas • St. Joseph, Missouri • **In Canada:** ACROW-RICHMOND LTD., Orangeville, Ontario.

ENGINEERING NEWS-RECORD

EIGHTY-SIXTH YEAR OF PUBLICATION

ABP ABC MEMBER

Editorial Offices, 330 W. 42nd St., New York 36, N. Y.
New York- LOngacre 4-3000; Chicago - MOhawk 4-5800; San Francisco - DOuglas 2-4600
Washington - REpublic 7-6630

Editor, Waldo G. Bowman

Managing Editor, **Arthur J. Fox, Jr.**
Senior Editor, **Frederick S. Merritt**

Highways, Airports—Transportation
Leo J. Ritter, Jr., Edward M. Young, Jr., Joseph F. Wilkinson

Buildings, Bridges—Structures
David B. Hill, Marianne Stern Friedland, C. W. Griffin, Jr.

Rivers Sanitation—Water Resources
James B. Sullivan, William W. Jacobus, Jr.

Finance, Labor—Management
Robert J. Stinson, Charles J. Harding

Regional Editors
J. Roland Carr, *Chicago, 520 N. Michigan Ave.*
Martha Alexander, *Staff Assistant*
Lauress L. Wise, *San Francisco, 68 Post St.*

Copy—Production
Barbara Lamb, Irwin Landau, Nancy Parkes, John C. Greenough

Presentation
Harry W. Jensen, Robert G. Young

Statistics, Prices, Costs—Business News
Elsie Eaves, *Manager*
Julia Mahoney, *Construction Reports*
Mildred Wetzel, Marian Sciorra, Marie Moravsik, Elaine Chomyak, Elizabeth Werra, Eleanor Queret
James Webber, Ruth Carlson, *Economics*
William P. Larkin, *Prices, Wages, Indexes*
Evelyn Huber, Charlotte Foster, *Statistics*
Bertha Herrmann, *Unit Prices*

Editorial Research and Indexing
Eva Gierat, Rene Hay, Leah Shanks, Charlotte Knight, Jane Jacobson

Consulting Editors: **Van Tuyl Boughton, Nathan A. Bowers**

Advertising Sales Manager: **Donald S. Robertson**

Circulation Manager: **Edward F. Bressler**

Washington Bureau, National Press Bldg., Washington 4, D. C., George B. Bryant, Jr., Chief, Alan Adams, Glen Bayless, Roy Calvin, Ernest Conine, Anthony DeLeonardis, John Donaldson, Jay Flocken, Boyd France, Donald Loomis, Gladys Montgomery, Arthur Moore, Seth Payne, Dean Reed, Morton Reichek, Caroline Robertson, Vincent Smith.

Domestic News Bureaus: Atlanta—801 Rhodes-Haverty Bldg., B. E. Barnes, Chief, Frances Ridgway; **Chicago**—520 N. Michigan Ave., Stewart Ramsey, Chief, Elizabeth Wilson, Bruce Cross; **Cleveland**—55 Public Square, Arthur Zimmerman, Chief, Violet Forsha; **Dallas**—901 Vaughn Bldg., Marvin Reid, Chief, Lorraine Smith; **Detroit**—856 Penobscot Bldg., Donald MacDonald, Chief, Sally Ayling; **Los Angeles**—1125 W. 6th St., Kemp Anderson, Jr., Chief, Michael Murphy, Jack Meyer, Marvin Petal; **San Francisco**—68 Post St., Jenness Keene, Chief, Donald Winston; **Seattle**—6040 Fifth Ave., N.E., Ray Bloomberg.

Foreign News Bureaus: London—John Shinn; **Paris**—Robert Farrell; **Mexico City**—Peter Weaver; **Bonn**—Morrie Helitzer; **Beirut**—O. M. Marashian; **Tokyo**—Sol Sanders; **Caracas**—John Pearson; **Moscow**—Robert Gibson.

Correspondents: In 70 principal U. S. cities and 70 cities throughout the world.

Director of News Bureaus: John Wilhelm; Managing Editor, Margaret Ralston.

McGraw-Hill Economics Department: Dexter M. Keezer, Director; W. H. Chartener.

Publisher, Robert F. Boger

ENGINEERING NEWS-RECORD, Vol. 164, No. 2, JANUARY 14, 1960

Published weekly by McGraw-Hill Publishing Company, James H. McGraw (1860-1948), Founder. Publication Office, 99-129 North Broadway, Albany 1, N. Y. See panel below for directions regarding subscriptions or change in address. **Executive, Editorial, Advertising and Circulation Offices. McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y.** Donald C. McGraw, President; Joseph A. Gerardi, Executive Vice President; L. Keith Goodrich, Vice President and Treasurer; John J. Cooke, Secretary; Nelson Bond, President, Publications Division; Shelton Fisher, Senior Vice President; John R. Callaham, Vice President and Editorial Director; Joseph H. Allen, Vice President and Director of Advertising Sales; A. R. Venezian, Vice President and Circulation Coordinator. **Subscriptions are solicited only from persons with identifiable commercial or professional interests in construction and building. Position and company connection must be indicated on subscription orders.** United States subscription rate for individuals in the field of this publication $6.00 per year, single copies 50 cents; foreign $20 per year, payable in advance. Second-Class mail privileges authorized at Albany, New York. Printed in U.S.A.

Title registered in U.S.A. Patent Office. ©Copyright 1960 McGraw-Hill Publishing Co., Inc. All Rights Reserved.

UNCONDITIONAL GUARANTEE: We agree, upon request to our New York office, direct from paid-up subscribers, to cancel any subscription if ENGINEERING NEWS-RECORD's editorial service is unsatisfactory, and will refund the proportionate subscription price of any unmailed copies.

SUBSCRIPTIONS: Send subscription correspondence and change of address to Subscription Manager, ENGINEERING NEWS-RECORD, 330 W. 42nd St., New York 36, N. Y. Subscribers should notify publisher *promptly of any change of address, giving old as well as new address, and including postal zone number,* if any. If possible enclose an address label from a recent issue of the magazine. Please allow one month for change to become effective.

Postmaster: Please send Form 3579 to Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

PLAN YOUR ENTRY NOW!

The Third Annual

ALFRED A. RAYMOND AWARD

ONE THOUSAND DOLLARS

OPEN TO ALL: Practicing engineers, engineering faculty, graduate students and undergraduates. This competition invites papers which will promote ingenuity, originality, and research in the field of foundation engineering as related to the *foundations for structures*. Any aspect of this broad field, theory or practice, is a fit subject. Deadline for all papers is September 1, 1960.

THE JUDGES: FRANK A. MARSTON, Partner, Metcalf & Eddy, Consulting Engineers, Boston, Massachusetts.

WILLIAM W. MOORE, Partner, Dames & Moore, Consulting Engineers, San Francisco, California.

RALPH B. PECK, Professor of Foundation Engineering, University of Illinois, Urbana, Illnois.

"These awards by Raymond International Inc., are a step in the right direction. By lending encouragement to research in the foundation field, they can stimulate interest in civil engineering research generally. More of it must be done if the art of construction is to advance."

—Waldo G. Bowman, Editor, Engineering News Record.

WRITE NOW FOR RULES AND REGULATIONS

ALFRED A. RAYMOND AWARD, Dept. E, Room 1214, 140 Cedar Street, New York 6, N. Y. Telephone: COrtlandt 7-7070.

SPONSORED BY RAYMOND CONCRETE PILE COMPANY

a Division of Raymond International Inc.

WHAT'S BEHIND THE BIG SWITCH TO

here are the real reasons why you see more *and* more MANITOWOCS *on jobs everywhere*

No doubt *you* have noticed the swing to Manitowoc — on highway jobs, building construction, trenching work, dam projects — on jobs big and small in every state. Never before has Manitowoc offered as complete a line of big capacity shovels and cranes tailored to match the rocketing growth of heavy construction. In every size range, on crawlers or rubber, Manitowoc machines will help you meet the challenge of the Sixties! Now . . . check these facts behind the big switch.

SIMPLE, MONEY-SAVING DESIGN puts you yards ahead in output — dollars ahead on your balance sheet. The exclusive Manitowoc slide pinion design allows you to channel engine power directly and selectively only to desired operating functions . . . by-passing those not needed. There are fewer moving parts, requiring less maintenance, and providing a full surge of direct-line power.

FASTER CYCLE SPEED with responsive disc-type swing clutches, fast-acting brakes, and smooth torque converter drive. Rapid swings, hoists, and travel (even up 30% grades) speed the work on any type of job to finish out contracts ahead of time.

INSTANT-TOUCH CONTROL for precise lift work and accurate spotting over haul units. Plunger activated drum clutches can be slipped or locked in place, even with drums reversed. Air controls make excavator operation easy on the shovel runner.

RESERVE-POWER — RESERVE CAPACITY. Because of Manitowoc's unique, "Power-flo" design, the engine is never straining — always has a reservoir of power available. And every model is ready to put out bonus capacity if needed.

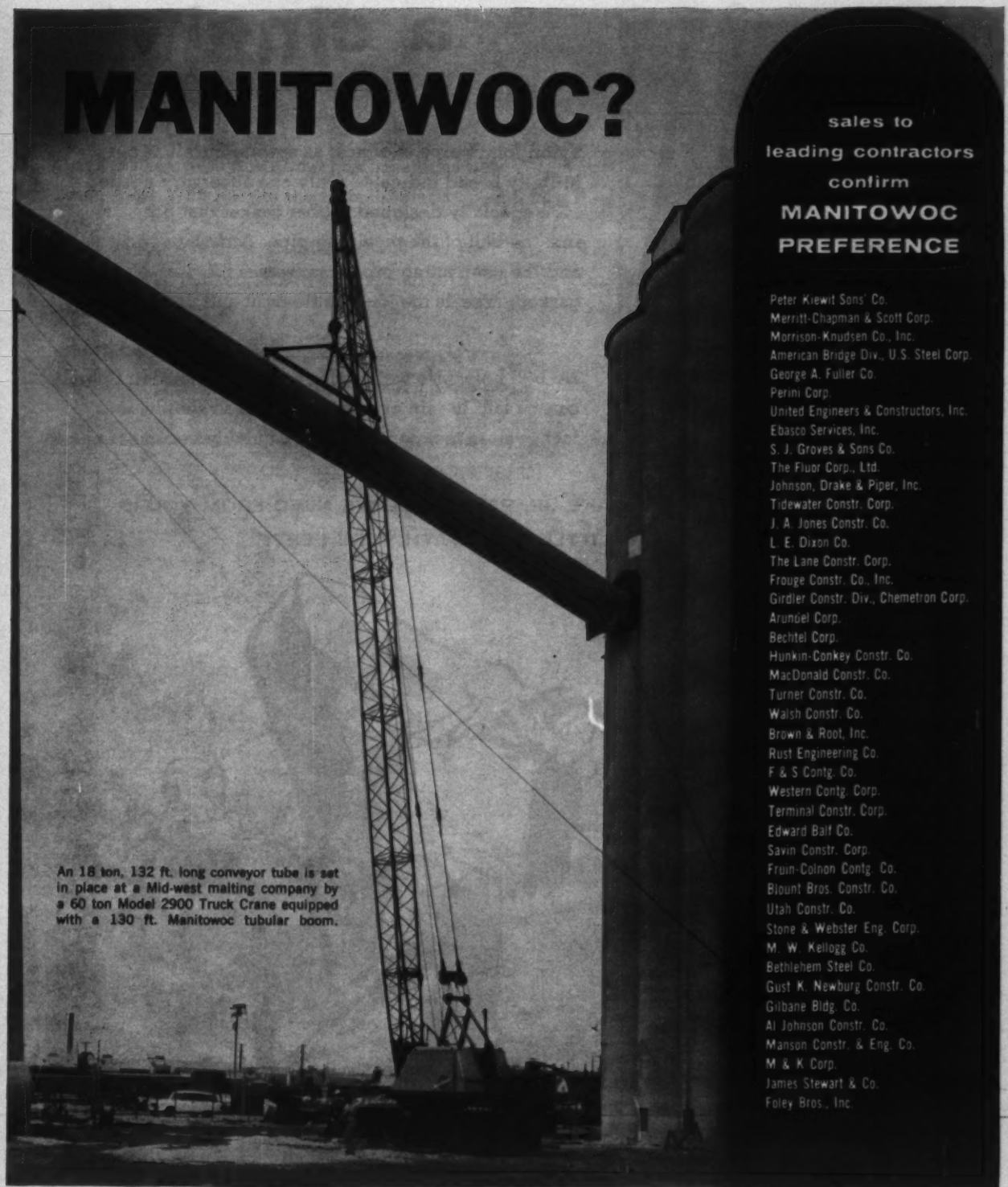
EXTRA STRENGTH AND LONGER LIFE IN EVERY PART due to selective use of the best available materials for each specific component. Both shovel and crane booms are engineered to take the toughest jobs in stride. Huge, one-piece carbodies hold their shape forever — keep the entire machine in permanent alignment.

UNMATCHED CAPACITY RANGE on crawlers or rubber. Now you can choose a Manitowoc that will perfectly match *your* operation. The Manitowoc line is bigger than ever — ranging from a 1¼-yd. excavator to the world's largest crawler-type lift crane . . . the 125 ton Model 4000. Study the chart below, then contact your Manitowoc distributor for full information on the machine that will put you way ahead of your competition!

LOOK WHAT MANITOWOC *OFFERS FOR 1960!*

	NINE CRAWLER MACHINES									THREE ON RUBBER			
MODEL	2000	2300	3000	3100	3400	3600	3900	4000	4500	MODEL	2800	2900	3500TC
SHOVEL	1¼ YD.	1½ YD.	...	2½ YD.	2½ YD.	3 YD.	...	...	6 YD.	CRANE	45 TON	60 TON	80 TON
CRANE	25 TON	35 TON	50 TON	50 TON	65 TON	65 TON	80 TON	125 TON	100 TON	...	...	...	...
DRAGLINE	1¼-1½ YD.	1½ YD.	...	2½ YD.	...	3 YD.	3-3½ YD.	...	6 YD.	...	...	...	...
TRENCH HOE	1¼ YD.	1½ YD.	...	2½ YD.	2½ YD.	3 YD.	...	...	...	...	...	...	...

MANITOWOC?



An 18 ton, 132 ft. long conveyor tube is set in place at a Mid-west malting company by a 60 ton Model 2900 Truck Crane equipped with a 130 ft. Manitowoc tubular boom.

sales to leading contractors confirm MANITOWOC PREFERENCE

Peter Kiewit Sons' Co.
Merritt-Chapman & Scott Corp.
Morrison-Knudsen Co., Inc.
American Bridge Div., U.S. Steel Corp.
George A. Fuller Co.
Perini Corp.
United Engineers & Constructors, Inc.
Ebasco Services, Inc.
S. J. Groves & Sons Co.
The Fluor Corp., Ltd.
Johnson, Drake & Piper, Inc.
Tidewater Constr. Corp.
J. A. Jones Constr. Co.
L. E. Dixon Co.
The Lane Constr. Corp.
Frouge Constr. Co., Inc.
Girdler Constr. Div., Chemetron Corp.
Arundel Corp.
Bechtel Corp.
Hunkin-Conkey Constr. Co.
MacDonald Constr. Co.
Turner Constr. Co.
Walsh Constr. Co.
Brown & Root, Inc.
Rust Engineering Co.
F & S Contg. Co.
Western Contg. Corp.
Terminal Constr. Corp.
Edward Balf Co.
Savin Constr. Corp.
Fruin-Colnon Contg. Co.
Blount Bros. Constr. Co.
Utah Constr. Co.
Stone & Webster Eng. Corp.
M. W. Kellogg Co.
Bethlehem Steel Co.
Gust K. Newburg Constr. Co.
Gilbane Bldg. Co.
Al Johnson Constr. Co.
Manson Constr. & Eng. Co.
M & K Corp.
James Stewart & Co.
Foley Bros., Inc.

Manitowoc

MANITOWOC ENGINEERING CORP.

(A Subsidiary of The Manitowoc Company, Inc.)

Manitowoc, Wisconsin

SHOVELS	CRANES	DRAGLINES	TRENCH HOES
1¼ — 6 YDS.	25 — 125 TONS	1¼ — 6 YDS.	1¼ — 3 YDS.

a cinch to

The "boys" are back . . .!

by popular demand! And three years' additional experience proves that Tyton Joint pipe has more than lived up to everything they said about it in 1957.

Tyton Joint® pipe is *almost* as easy to install as our hillbilly friend indicates. Only one accessory needed . . . a specially designed rubber gasket that fits into the bell of the receiving pipe. A push or two and the connecting pipe compresses the gasket . . . seals the joint bottle-tight and permanently.

No bell holes. No waiting for weather. Tyton Joint pipe can be laid in rain or wet trench. It's so simple, in fact, even an inexperienced crew quickly becomes expert.

U.S. PIPE FOR WATER, SEWERAGE AND

install!

You'll be hearing more about this ingenious new Tyton Joint. Why not get the facts firsthand . . . and now?

Write or call. We'll be glad to give them to you.

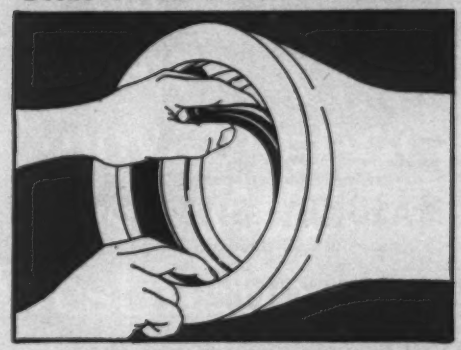
U. S. PIPE AND FOUNDRY COMPANY
General Office: Birmingham 2, Alabama

A WHOLLY INTEGRATED PRODUCER FROM MINES AND BLAST FURNACES TO FINISHED PIPE

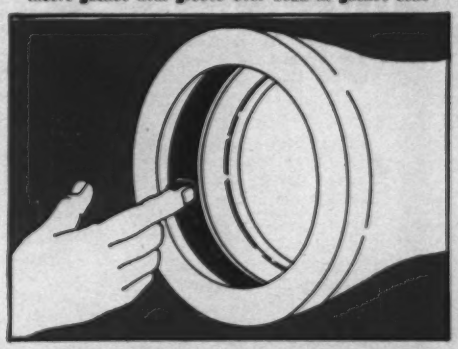
INDUSTRIAL SERVICE CAST IRON

U. S. TYTON JOINT

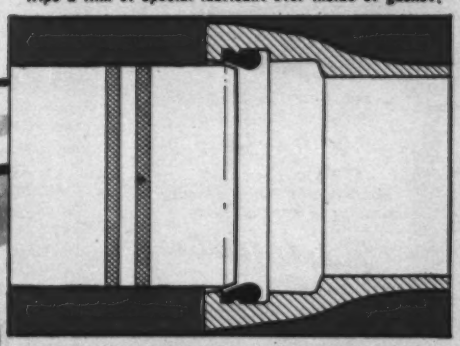
ONLY FOUR SIMPLE ACTIONS



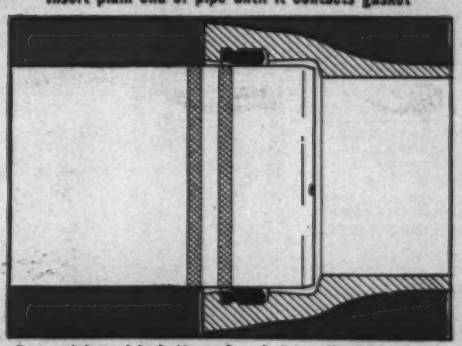
Insert gasket with groove over bead in gasket seat



Wipe a film of special lubricant over inside of gasket



Insert plain end of pipe until it contacts gasket



Force plain end to bottom of socket . . . the job's done!

Let the BIT DO THE WORK!
Switch from Steel Star Drills to...
NEW ENGLAND
Cyclo-twist®
Rotary Carbide-Tipped
MASONRY BITS
Drill more holes with less effort and at less cost. The "reasons why" are in this combination of features found only in N. E. Carbide Bits.

Ground Cutting Edges
No Carbide Hang-over
Carbide Tip is Copper Brazed for Longer Bit Life
Spiral Flutes Assure Positive Dust Removal from Cutting Zone
Heat-Treated, High-Quality Alloy Steel
SIZES: 3/16" to 1 1/2" diameter. Extra lengths up to 36".
SEND COUPON BELOW FOR FULL DETAILS
Other New England Carbide-Tipped Bits Include:
Cyclo-Core®
Multi-Tipped Bits for rotary drilling of hard masonry
Thunder-twist®
Bits for one-man hammer-drilling in any masonry from brick to granite
NEW ENGLAND CARBIDE
Designed, Engineered, and Proven for the Job. COPIED, BUT NEVER EQUALED!
GET FREE DRILLING MANUAL

NEW ENGLAND
Carbide Tool Co.,
55H Commercial St.
Medford 55, Mass.
Please send me a copy of the FREE "MASONRY BIT SELECTOR GUIDE"
Name.....
Address.....
City.....State.....

Consulting by Professors

SIR—I have noticed with more than a little interest your editorial on consulting by professors (ENR Nov. 12, 1959, p. 116). I am disturbed with your apparent satisfaction with the outcome of this study made by the South Dakota Board of Regents. This type of outside work is a continued source of irritation to consulting engineers and to those who operate independent laboratories.

It would not be so bad if this competition were on a fair and friendly basis, but it seldom is. It can be shown in many instances that the professors charge their clients less than the recommended minimum fee; they have little or no overhead; they can get student help at a low cost; they can make use of the school's computers and test equipment during off hours. Under these conditions professors can get a handsome return from a cut fee, and only the engineer in private practice loses.

I agree that college faculty members should be allowed to do some outside consulting work, primarily because they will be better teachers by so doing, but the rules governing such practice should be clarified beyond the wording of the existing Canon, "He will not use the advantages of a salaried position to compete unfairly with another engineer."

The National Society of Professional Engineers has provided a useful clarification:

"While in a salaried position, he will accept part-time engineering work only at a salary or fee not less than that recognized as standard in the area.

"An engineer will not use equipment, supplies, laboratory, or office facilities of his employer to carry on outside private practice without consent."

I personally would prefer the elimination of the last two words "without consent" to put the consulting work by faculty men on the proper competitive basis with the engineer in private practice. I also feel that a college professor doing outside work should be on a part time salary and should establish an office or laboratory off the campus. I feel quite certain that a majority of consulting engineers would agree with such an arrangement and, as a result, an important segment of the engineering profession would be more in sympathy with the educational aims of our educational institutions.

C. W. BRITZIUS,
President
Twin City Testing and Engineering Laboratory, Inc.
St. Paul, Minn.

Editor's Note: ENR's editorial support of the South Dakota action was based on the intention of that state's Board of Regents to enforce certain provisions under which professors might consult. Those provisions should meet most of Reader Britzius' objections.

Architects and Engineers

SIR—Referring to your editorial concerning architects and engineers (ENR Nov. 26, 1959, p. 112) I agree that the law should allow architects and engineers to design any structure and/or equipment that they are technically competent to design.

Further, the person in charge of design should not only be technically qualified but licensed or registered in the field of work that the particular project requires. If he is not, he should employ licensed or registered professional persons who are, and the drawings and specifications should bear the seal of all professional persons concerned with the adequacy of the design.

The public interest in all cases as it regards health and safety must be protected and incompetence should definitely be eliminated.

WILLIAM F. RYAN
Director
National Society of Professional Engineers
Salina, Kan.

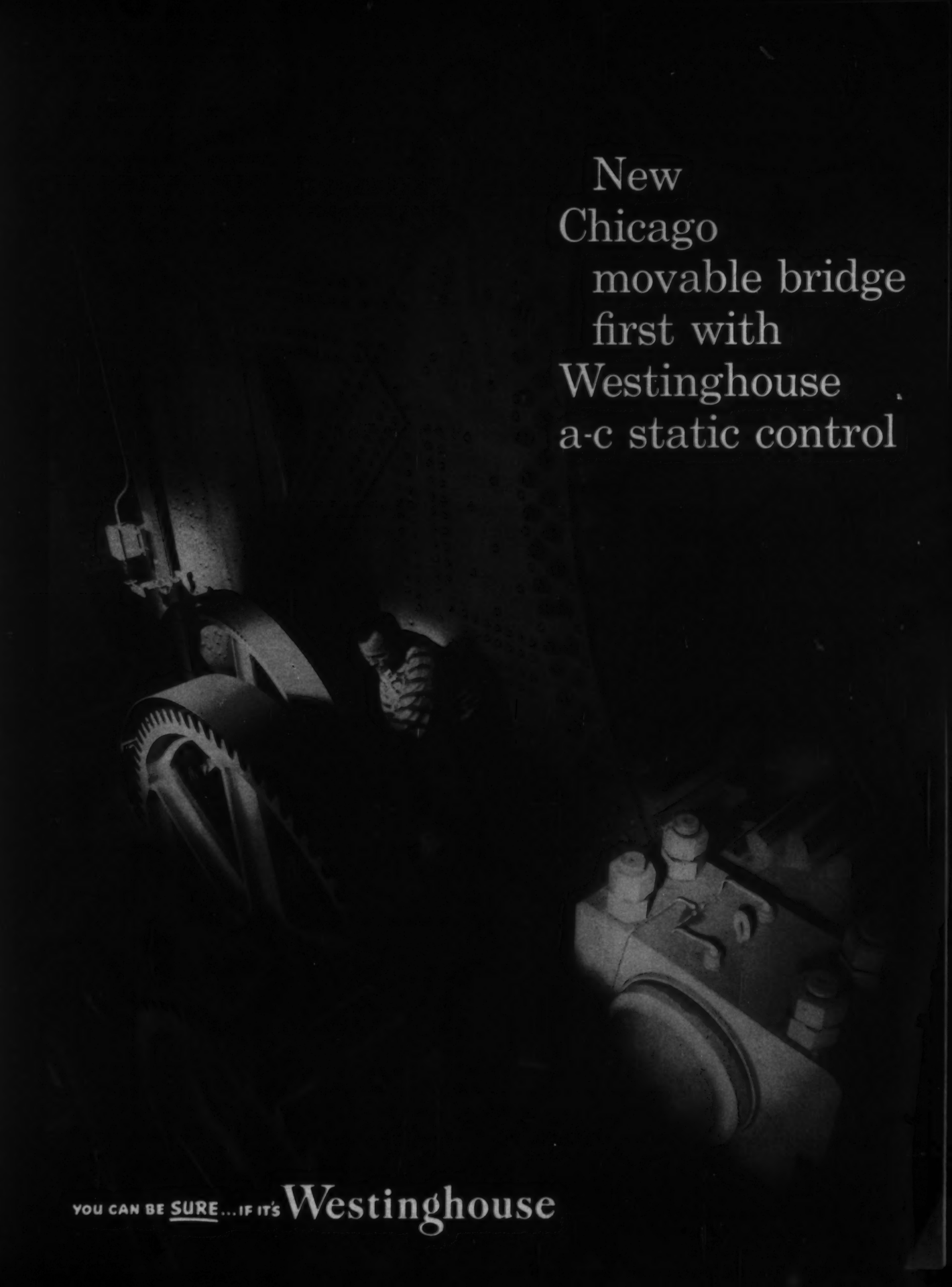
▶ The article "Who's Responsible For What" (ENR Nov. 19, 1959, p. 45) brings to mind a distinction between the duties of architect and engineer as given by Architect Wallace K. Harrison (if my memory serves) in a talk several years ago, "If it weren't for the engineer most structures would fall down, and if it weren't for the architect an outraged public would demand that they be torn down."

Of course, the truth lies somewhere between these two extremes.

KIRBY SMITH
(Rear Adm., CEC, USN, Retired)
Atlanta, Ga.

(Reader Comment continued p. 13)

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.


New
Chicago
movable bridge
first with
Westinghouse
a-c static control
YOU CAN BE SURE... IF IT'S Westinghouse

COVER PHOTO: View at West Van Buren Street Bridge, Chicago, showing leaf rack, pinion and main drive gearing operated by Westinghouse Bridg-O-Matic control to raise and lower east leaf of bridge.

Double leaf, trunnion bascule bridge opening for Chicago River traffic. One man in operator's room, East Pier, upper right, controls the bridge by means of an all a-c system employing Westinghouse saturable reactor-type controller.

J-94132-2

W. C. Carl, Construction Engineer, Westinghouse (standing), discusses Bridg-O-Matic drive with Stephen J. Michuda, Chief Bridge Engineer, City of Chicago, at right, and his staff (left to right): S. Frayer, Structural Engineer; M. D. Krausman, Assistant Chief Bridge Engineer; and R. H. Keil, Electrical Engineer, Bridge Division.

Stephen J. Michuda; M. B. Trimble, Construction Sales Engineer, Westinghouse; and William G. Divane, President, Divane Brothers Electric Company, Electrical Contractors, discuss main control desk which centralizes operation of leaf and auxiliary drives and selection of east and west incoming service feeders. Instruments on sloped panel indicate leaf position and electrical circuit conditions.

View of switchboard room showing incoming line switching equipment, magnetic control for auxiliary drives, Bridg-O-Matic wound rotor motor control panels and saturable reactor cubicles. Robert E. O'Brien, Chief Electrician, examines panel containing emergency control switching equipment at far end of room.

Westinghouse Bridg-O-Matic Control specified to operate Chicago's West Van Buren Street Bridge

An important factor in the design of the West Van Buren Street movable bridge in Chicago was the selection of the most efficient drive and control system available. Westinghouse Bridg-O-Matic* control was specified after a study of its advantages over other types of control.

The West Van Buren Street Bridge is a double leaf, trunnion bascule bridge across the south branch of the Chicago River and is designed to carry vehicular and pedestrian loads. Each bridge leaf is normally operated by two 100-hp a-c wound rotor induction motors. For emergency operation, a single motor per leaf may be used. During normal operation, the time required to open or close the bridge is approximately 55 seconds. Four electrically operated thrustor brakes are provided for holding each leaf in the desired position. Minimum brake shoe lining wear is encountered since the leaves are normally retarded by the motors through the action of the static reactor/Magamp controller to a low speed before the brakes are caused to set.

The normal control of the two operating motors for each leaf, connected for parallel operation, is by means of the Bridg-O-Matic control (a-c reactor control system). The speed torque performance of this system provides precision operation under all conditions of leaf load from normal to a 10-lb wind, without the use of any "mechanical" braking, for positive slowdown and reduced speed operation.

Electric power, supplied by two independent networks, is three phase, four wire, 60 cycle at 208/120 volts, stepped up at the bridge through transformers to 480 volts.

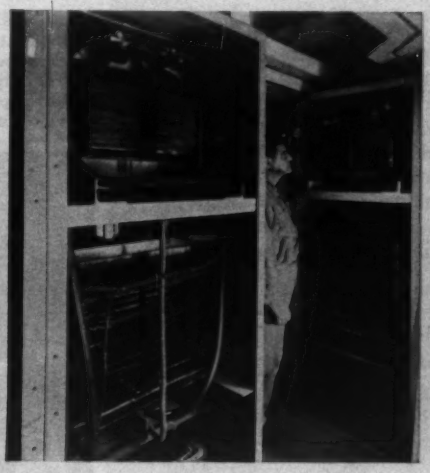
An alternate control system may be selected by moving the control selector switch from "Reactor" to "Off." This provides the conventional reversing wound rotor controller with six power points and a drift point. Either motor may be used. (*contd.*)

*Trade-Mark

J-94132-3

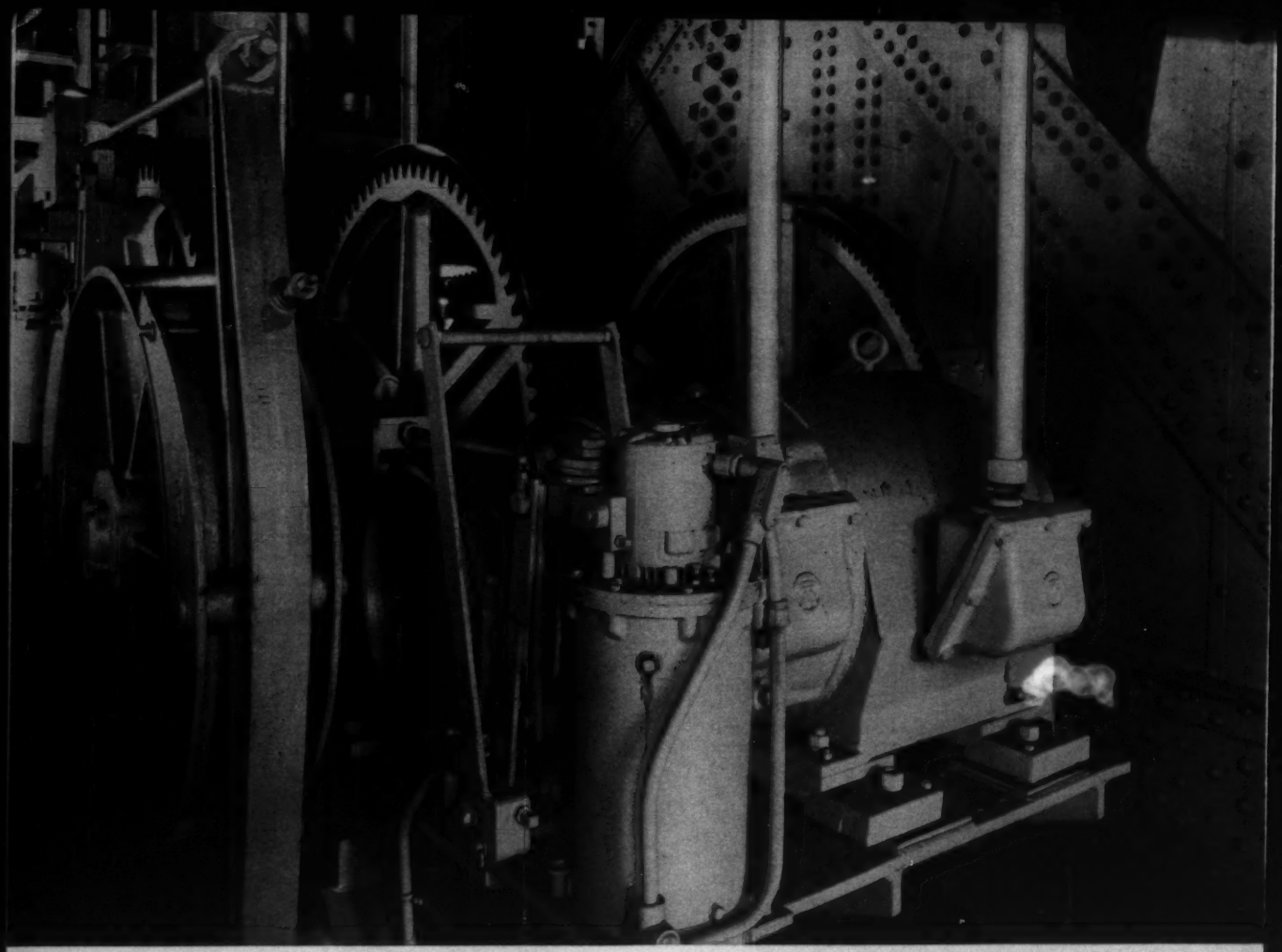
YOU CAN BE SURE...IF IT'S
Westinghouse

L. A. Johnson, Westinghouse Sales Engineer; E. A. Leske, Electrical Engineer, Divane Brothers Electric Company; and R. H. Keil inspect Westinghouse Magamp control section of bridge switchboard.



Chief Electrician, Robert E. O'Brien, checks cubicles which house Westinghouse primary saturable reactors.

Incoming line cubicle of bridge control (switchboard room, East Pier) is inspected by W. C. Carl; Edward Klausner, Engineer in Charge of Bridge Construction; and R. H. Keil.



View showing one of leaf drives (there are two per leaf), each with Westinghouse 100-hp a-c wound rotor motor and a-c thrustor-operated motor and machinery brakes.

Westinghouse Bridg-O-Matic operates Van Buren Street Bridge (contd.)

Interlocks are provided in the control system to prevent operation of leaves until all flashers, traffic lights, gongs and warning horns are operating, traffic gates are down, and bridge centerlocks are withdrawn.

Westinghouse saturable reactor a-c systems offer many possibilities for vertical lift, bascule or swing bridge designs, and other applications such as dam and lock gates, cranes, hoists, etc. For more information call your Westinghouse electrical construction engineer, or write: Westinghouse Electric Corporation, Box 868, Pittsburgh 30, Pa. J-94132-4

OWNER & DESIGNER: City of Chicago, Ill.
Department of Public Works, Bureau of Engineering
Division of Bridges and Viaducts

CONSULTING ENGINEER: Hazelet & Erdal, Louisville, Ky., and Chicago, Ill.

ELECTRICAL CONTRACTOR: Divane Brothers Electric Company, Chicago, Ill.

SUPERSTRUCTURE-MACHINERY CONTRACTOR:
Overland Construction Company, Chicago, Ill.

STEEL FABRICATOR: American Bridge Division, United States Steel Corporation, Pittsburgh, Pa.

YOU CAN BE SURE...IF IT'S **Westinghouse**

WATCH "WESTINGHOUSE LUCILLE BALL-DESI ARNAZ SHOWS" CBS TV ALTERNATE FRIDAYS

John A. Machiels, Bridge Maintenance Machinist, looks at the 225-kva Westinghouse Inerteen®-filled step-up transformer which provides 480-volt supply for bridge drive motors and auxiliaries. Type DB-50 wall-mounted circuit breaker provides main feeder protection.

. . . Reader Comment

Why Higher Bridges?

SIR—I wonder if the brass in Washington has considered designing special "low-boy" vehicles that hug close to the road for hauling their missiles, or the vast network of farm-to-market roads.

In Texas you can completely bypass the main highways by travelling a few added miles and still go to any area in the state. But still the crossings in Texas have to be higher, fouling many sections now under contract or construction.

A billion dollars would do lots of things, if applied properly.

H. VAN WILSON
Houston, Texas

Backwards

In the article on Tunnel Estimating (ENR Dec. 17, p. 64), the symbol letters A and B in Table I on page 65 should be reversed; and the same is true where they appear in the text at the beginning of the article on p. 64. B designates "hard intact or massive moderately jointed" rock while A designates "stratified or schistose" rock. The symbols are correctly given in Table II on page 66.

For Your Calendar . . .

Canadian Construction Association, annual meeting, Palliser Hotel, Calgary, Alta., Jan. 23-27. Write: CCA, Construction House, 151 O'Connor St., Ottawa 4, Canada.

Associated Equipment Distributors, annual meeting, Conrad Hilton Hotel, Chicago, Ill., Jan. 24-28.

Association of Asphalt Paving Technologists, annual meeting, Hotel Peabody, Memphis, Tenn., Jan. 25-27. Write: Ward K. Parr, AAPT, 1224 East Engineering Building, Box 619, Ann Arbor, Mich.

Plant Maintenance & Engineering Conference, Convention Hall, Philadelphia, Pa., Jan. 25-27. Write: Clapp & Poliak, Inc., 341 Madison Ave., New York, N. Y.

Private Truck Council of America, Inc., annual convention, Roosevelt Hotel, New York City, Jan. 28-29. Write: Private Truck Council of America, Inc., Sheraton Building, Washington 5, D. C.

American Society of Heating, Refrigerating and Air Conditioning Engineers, annual meeting, Baker Hotel, Statler Hilton Hotel and Memorial Auditorium, Dallas, Tex., Feb. 1-4. Write: R. C. Cross, 234 Fifth Ave., New York 1, N. Y.

National Bituminous Concrete Association, annual convention, Sheraton-Cadillac Hotel, Detroit, Mich., Feb. 1-4.

American Society for Testing Materials, committee week meeting, Hotel Sherman, Chicago, Ill., Feb. 1-5. Write: ASTM, 1916 Race St., Philadelphia, Pa.

Society of the Plastics Industry, Reinforced Plastics Division Conference, Edgewater Beach Hotel, Chicago, Ill., Feb. 2-4. Write: Society of the Plastics Industry, Inc., 250 Park Ave., New York 17, N. Y.

American Institute of Mining, Metallurgical and Petroleum Engineers, annual meeting, Statler-McAlpine Hotel, New York, N. Y., Feb. 14-18. Write: Ernest Kirkendall, Secy., AIME, 29 W. 39th St., New York 18, N. Y.

EVEN IN FAR AWAY LANDS
YOUR PRODUCTS ARE YOUR LIABILITY

Should sickness, injury, death or damage to property result from the consumption or use of your products overseas your business could face a staggering loss.

Product Liability Insurance carefully fitted by AFIA to the particular needs of your business abroad is the strongest safeguard you can have. Then should the unexpected happen—an error in manufacturing, a wrong label or a machine part that fails—your liability is soundly protected.

It will pay you to ask your agent or broker to review your foreign insurance program with AFIA. Then you will be sure your protection is up-to-date and conforms to insurance requirements overseas.

AFIA

AMERICAN FOREIGN INSURANCE ASSOCIATION
161 William Street • New York 38, New York

CHICAGO OFFICE . . Insurance Exchange Building, 175 West Jackson Blvd., Chicago 4, Illinois
DALLAS OFFICE . . . . . 400 Vaughn Building, 1712 Commerce Street, Dallas 1, Texas
LOS ANGELES OFFICE . . . . . 3277 Wilshire Boulevard, Los Angeles 5, California
SAN FRANCISCO OFFICE . . Ross Building, 235 Montgomery Street, San Francisco 4, California
WASHINGTON OFFICE . . . Woodward Building, 733 15th Street N. W., Washington 5, D. C.

An association of leading American capital stock fire, marine, casualty and surety insurance companies providing insurance protection in foreign lands

NO ELBOW ROOM IN THIS TOUGH JOB!

W. E. O'Neil Construction Company relies on Mobil Products and Mobil Contractor PM System for Complicated Expressway Interchange Project

Move a couple of railroad bridges . . . build an underpass under heavily traveled expressways and railroad tracks . . . and at the same time, keep all this traffic flowing while you work within a congested area not much larger than a football field. That's the job W. E. O'Neil Construction Company is doing for the Cook County, Ill., Department of Highways.

This tri-level grade separation project imposes a terrible strain on O'Neil equipment. Working under tight, severely restricted conditions calls for absolutely safe and sure protection . . . and O'Neil Construction Company gets it with Mobil products and the Mobil Contractor PM System.

You can assure your equipment the same effective protection against damaging wear-and-tear . . . help reduce breakdown possibilities that cut profits . . . and keep well ahead of job time schedules by specifying Mobil lubrication products and methods. There's a Mobil representative near you—why not see him today!

Limited working area of expressway interchange project is apparent in this close-up of O'Neil equipment on the job.

Dependable delivery of Mobil products helps O'Neil keep equipment lubrication schedules up-to-date at all times.

John A. Coyne, O'Neil Treasurer, and Mobil Fleet Sales Manager N. C. McPhee (left) discuss phases of the Mobil Contractor PM System that are helping to keep equipment in top working condition.

PHOTOS LEFT AND UPPER RIGHT COURTESY COOK COUNTY HIGHWAY DEPARTMENT OF ILLINOIS

CONTRACTOR PM SYSTEM INCLUDES:

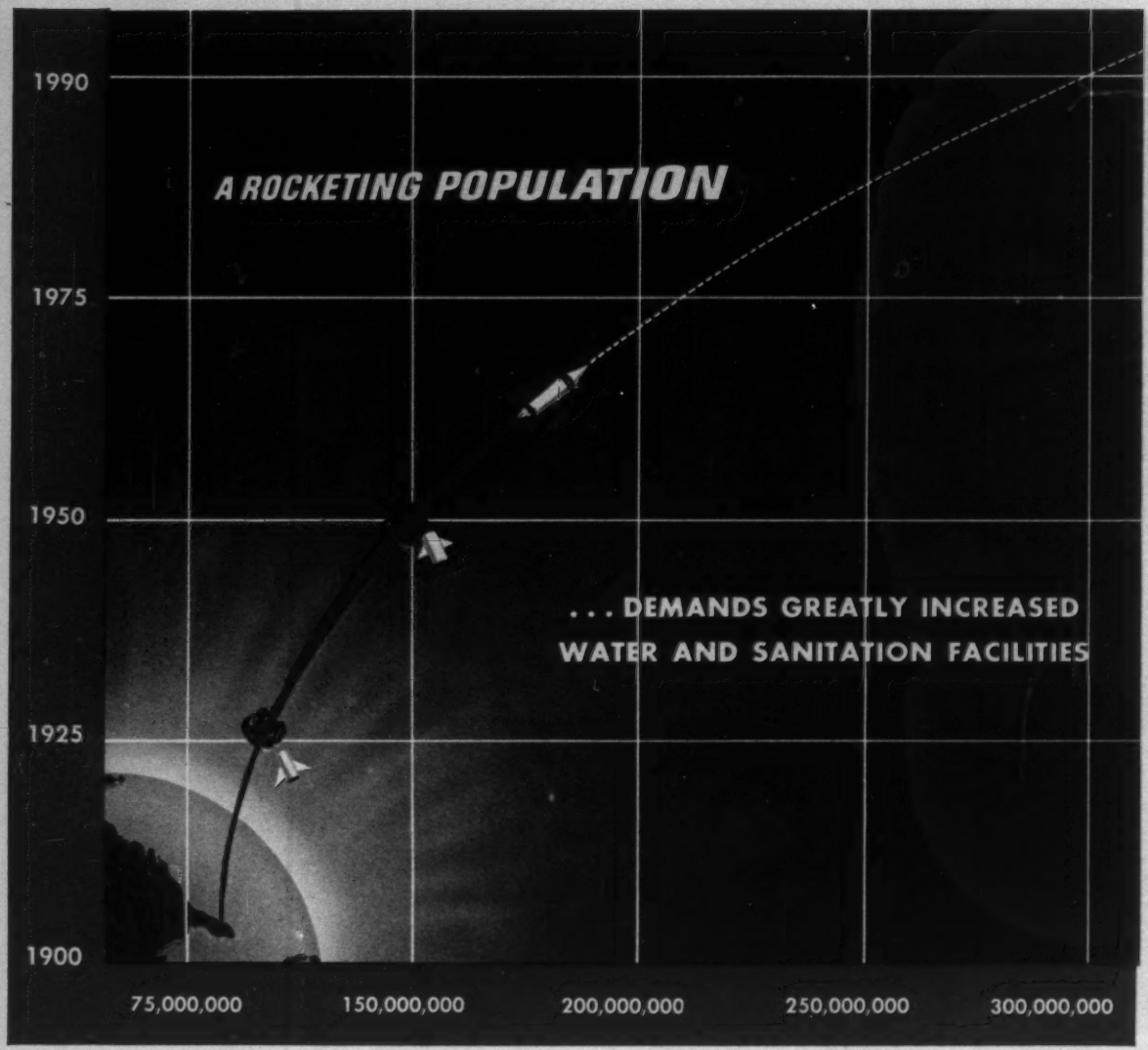
1. **Record Folder**—provides identifying data for each separate piece of equipment and holds equipment records.
2. **Operator's Recommendation Chart**—lists the correct lubrication recommendations for each piece of equipment.
3. **Weekly Service & Inspection Chart**—an up-to-date record of condition of equipment, work to be done or completed.
4. **Delivery Ticket**—lists petroleum supplies delivered to equipment on the job.
5. **"Squawk" Sheet**—used by equipment operator to point out trouble spots that may need immediate attention.

This simple, yet effective system can pay off for you—ask us for information!

Mobil

MOBIL OIL COMPANY

A Division of Socony Mobil Oil Company, Inc.
150 East 42nd Street, New York 17, N. Y.



Growth of U.S. Population in Millions:

1900—75; 1950—150; 1990—300 (Estimated)

And proportionate demands on water and sanitary facilities are increasing even more rapidly because of industry's ever-growing need for water supply and waste disposal.

Over the past half century Lock Joint Pipe Company has helped keep pace with the requirements of a doubling population by supplying millions of feet of concrete pipe for vital water and sewer lines. Virtually 100% of these are still in service and are operating with the same high efficiency as the day they were installed.

This unexcelled record for economy, efficiency and safety certainly recommends Lock Joint Concrete Pressure and Sewer Pipe as the ideal material to implement the long range plans of water and sanitation officials to meet the growing crisis.

LOCK JOINT PIPE CO.

East Orange, New Jersey

Sales Offices: Chicago, Ill. • Columbia, S. C. • Denver, Col. • Detroit, Mich. • Hartford, Conn. • Kansas City, Mo. • Perryman, Md. • St. Paul, Minn.

Pressure • Water • Sewer • REINFORCED CONCRETE PIPE • Culvert • Subaqueous

ENGINEERING NEWS-RECORD

Vol. 164, No. 2 January 14, 1960

Number of copies printed this issue 85,392

CONTENTS

44 Miles of Rock Holed Through..... 21
Cave-In and Collapse Take Four Lives..... 22
AASHO Road Test Moves Into Last Lap..... 23
Steel: Higher, but When and How Much?..... 24
No Building Dollars in Budget Surplus..... 24
Moving Day for 170-Ton Bridge Pier..... 25
Seismology Probes Bay Bottom..... 26
Coke Conveyor Spans Cuyahoga River..... 27
Narrows Bridge Piers Awarded..... 29

FEATURES

Concrete Shells Cover Post Office..... 30
Slipform Paver Meets Tight Road Specs..... 38
Building a Wharf the Easy Way..... 44

INTERNATIONAL

Red Chinese Fight Flood and Drought..... 46

FIELD AND OFFICE

Paintings Speak for Projects..... 51

RESEARCH AND DEVELOPMENT

Fabricating: High-Strength Bolts or Rivets?..... 53

NEW PRODUCTS

LeTourneau-Westinghouse Tandem Scrapers... 56
Ease of Handling Claimed for 30-Yd Pan..... 56

MEN AND JOBS

D. B. Steinman Forms Partnership..... 63
Parsons Firm Changes Name..... 63

BUSINESS AND FINANCE

Housing Dips as Usury Laws Bite..... 106
Equipment Orders Outpace Awards..... 106
Industry Building Loans Upset..... 108

LABOR

Steel: Industry Marks Time..... 110
NLRB Promotes Joint Board Use..... 111

Reader Comment ... 8
Calendar 13
Washington Observer 19
Obituaries 77
Unit Prices 79
Materials Prices 82
Construction Reports. 83
Statistics, Indexes ... 105
Editorials..... 122

Picture Credits

22—UPI; 25—Beacon Journal; 27—The McDowell-Wellman Companies; 38, 39—ENR; 40—H. M. Overturf; 44, 45—Ralph N. Miller; 46—McGraw-Hill World News; 51—Wisconsin State Hwy. Comm.; 54—bottom, Shell Chemical Corp.

Back issues of ENGINEERING NEWS-RECORD *are generally available for the previous six months. Semi-annual indexes will be sent on request.* ENGINEERING NEWS-RECORD *is also indexed in Industrial Arts Index and Engineering Index.*

THE CONSTRUCTION WEEK

AN END TO BID SHOPPING?—A plan to eliminate bid shopping on private work should be ready for approval by the end of the month. A joint committee of Associated General Contractors and mechanical specialty contractors will recommend a form of rules, now used in some areas, requiring subs to submit all bids to general contractors in advance of the bid opening. If the plan is approved and works on private jobs, it may be adopted for public works contracts.

HIGHWAY AWARDS REBOUND—Contracts of $73 million this week represent the highest weekly total reported by ENR since July. Contracts should continue at a fast clip during the next six months, because states can obligate federal-aid highway funds in greater volume than any other January-June period on record.

LET'S TALK IT OVER—The building trades unions "stand ready to support and participate in" a White House conference on labor-management problems, says Richard J. Gray, head of the AFL Building and Construction Trades Department. Mr. Gray is a long-time advocate of labor-management understanding, which he calls essential to the "ultimate goal of stability."

SMALL BEGINNINGS—Work on the suspended portion of New York City's $90-million Throgs Neck Bridge began this week when 2¼-in.-dia wire rope was stretched between the tops of the Bronx and Queens towers. Six of these small cables will carry catwalks; the catwalks will carry workmen; and the workmen will spin the 23-in. main cables of the structure.

JET-AGE JOB—Federal Aviation Agency will call for bids late this month on its revolutionary terminal building for Dulles International Airport, Chantilly, Va. Designed by Eero Saarinen, the terminal will be a long, narrow structure with cable-hung roof and special bays to accommodate the mobile lounges that will shuttle between it and the jet airliners.

HARD HATS AT THE WALDORF?—Sounds like the ritziest holing-through party yet: It's black tie at the Starlight Roof of New York City's Waldorf-Astoria Hotel Jan. 25. The gala affair will mark officially the final holing through of New York City's 4¼-mile West Delaware Tunnel. The actual event took place last week (p. 21).

TOUGH CONCRETE—A Russian engineer has developed a concrete with a grain structure similar to that of metal. The new material is flexible, almost as strong as cast iron and can be "welded" by chemically softening adjoining concrete surfaces then joining them under high pressure, reports Tass, the Soviet News Agency.

RENT IT 'FASTER from FOSTER'

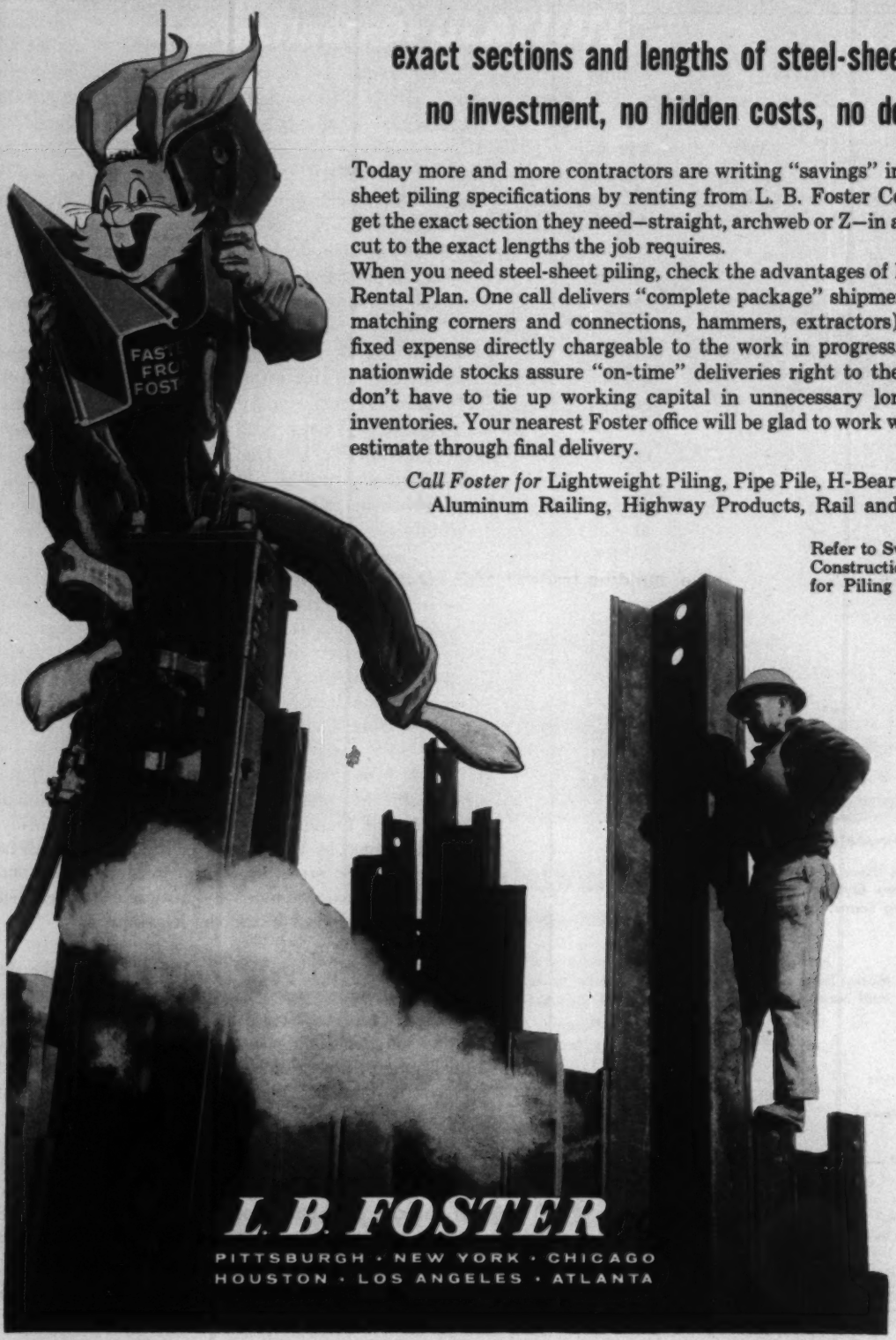
exact sections and lengths of steel-sheet piling
no investment, no hidden costs, no delays

Today more and more contractors are writing "savings" into their steel-sheet piling specifications by renting from L. B. Foster Company. They get the exact section they need—straight, archweb or Z—in any quantities, cut to the exact lengths the job requires.

When you need steel-sheet piling, check the advantages of Foster's Piling Rental Plan. One call delivers "complete package" shipments (including matching corners and connections, hammers, extractors)—at one low, fixed expense directly chargeable to the work in progress. And because nationwide stocks assure "on-time" deliveries right to the job site, you don't have to tie up working capital in unnecessary long-term piling inventories. Your nearest Foster office will be glad to work with you—from estimate through final delivery.

Call Foster for Lightweight Piling, Pipe Pile, H-Bearing Pile, Aluminum Railing, Highway Products, Rail and Pipe

Refer to Sweet's Industrial Construction File, or send for Piling Catalog EP-1.



L. B. FOSTER

PITTSBURGH • NEW YORK • CHICAGO
HOUSTON • LOS ANGELES • ATLANTA

Visit us at The ARBA Convention Booths 136-137

WASHINGTON OBSERVER

- Unions push Taft-Hartley change
- Titan is in trouble
- Plan-purchase still disputed

● **AFL-CIO unions are pushing for a quick vote in Congress on their Taft-Hartley picketing amendment.** This was promised by key legislators last year when the amendment—which would reverse the Denver Building Trades case and permit craft unions to picket common construction sites—fell out of the Landrum-Griffin reform law. Such picketing is now an illegal secondary boycott where it is directed at one contractor but hits others on the same project. AFL-CIO President George Meany says he expects Congress to keep the promise.

The strategy is to have the House Labor Committee take up the proposal first, expecting the Senate to go along if the measure gets through the House. Business groups are lining up against the change and will resist attempts to limit hearings to this one Taft-Hartley item. Its fate, at this point, is up in the air.

Other AFL-CIO legislative aims are already being promoted in Congress. The leaders want Davis-Bacon broadened to cover all non-farm construction over $25,000 to include health and welfare and other fringe payments, plus overtime rates. Other aims: a $1.1-billion school construction and teacher salary bill; a large-scale, low-rent housing program of 200,000 units; a $1-billion-a-year slum clearance program, plus cooperative and rental housing. AFL-CIO lobbyists have already moved onto Capitol Hill to support the drive; building trades leaders plan their legislative rally in March to back it up.

—

● **The $1-billion-plus Titan missile program is in serious trouble.** Delays in test launchings, alleged management bungles, and slippage in the missile's development schedule have forced the Martin Co., the major prime contractor, to overhaul the project's management. While Pentagon officials say there's no plan now to kill or cut the program, it's obvious Titan is in a crisis.

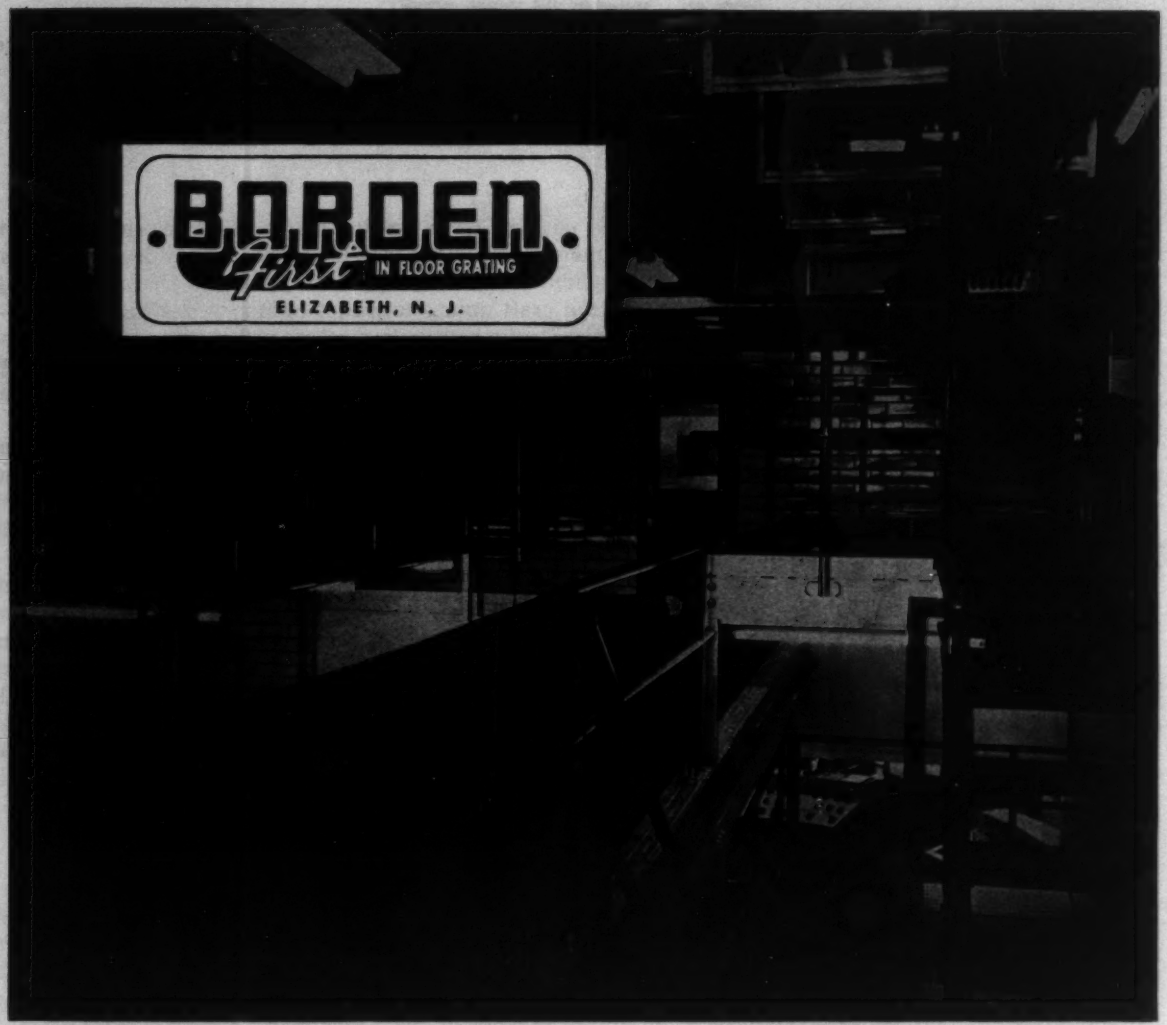
There may be implications for construction. Under the Air Force's policy of "concurrency"—that is, starting construction of bases before an ICBM is fully perfected—five Titan installations have already been begun or authorized and more are planned. Under present schedules more Titan missiles are to be produced than Atlas ICBMs.

The Titan troubles could delay new starts on bases. Pentagon experts say that though bases planned for Titan could theoretically be converted into Atlas sites, the costs in many cases would be prohibitive.

—

● **Equipment manufacturers as well as contractors are protesting the Army Engineers' requirement for purchase of project plans by bidders** (ENR Dec. 17, 1959, p. 49). Some Congressmen have also spoken up on behalf of constituents against the proposal, which has raised a flurry of controversy since it was put into effect.

Engineer officials say the ruling is on trial, and that it will come up for consideration again this spring when the Army-Associated General Contractors joint committee on contract forms and specifications holds its next meeting.



HERE'S HOW BORDEN FLOOR GRATING CUTS COSTLY FIELD CORRECTIONS

Insures correct dimensions, fit, and placement . . . .

1. A shop drawing of the job is submitted to the customer for approval, when necessary. This plan shows the size and shape of the grating area—how grating clears all obstructions.
2. Each finished panel is carefully checked for accuracy of dimensions.
3. Each panel is plainly marked with its number to insure quick, easy installation.
4. The entire platform is laid out on our shop floor. Over-all dimensions and obstruction openings are checked against shop drawings.
5. Erection diagram showing panel mark numbers is supplied for field installation.

BORDEN METAL PRODUCTS CO.

Gentlemen:
"Please send me NEW 1960 BORDEN Catalog"

NAME .....

TITLE .....

COMPANY NAME .....

ST. AND NO. .....

CITY AND STATE .....

Write today for free 16-page catalog showing all basic types of grating; more than 30 dimensional drawings of sub-types; eight safe load tables for steel and aluminum grating.

BORDEN METAL PRODUCTS CO.

"Greatest name in gratings"

815 Green Lane Elizabeth 2-6410 Elizabeth, N. J.

***Plants at:* Union, N. J. - Leeds, Ala.**
Conroe, Texas - Beeton, Ontario

44 Miles of Rock Holed Through

Hardrock tunnelers blew the final plug in New York City's West Delaware Tunnel in the Catskill Mountains last week. The shot cleared the last barrier in a 13½-ft bore 44 miles long—second longest tunnel ever constructed.

Stanley M. Dore, chief engineer of the New York City Board of Water Supply (ENR July 9, 1959, p. 64), fired the round ending the four-year excavating job. The principal remaining work in the tunnel is concreting the rest of its length (about one-third) to the finished inside diameter of 11 ft 4 in. Major contracts are yet to be let for work at each end of the tunnel, however.

The tunnel is part of the third and final stage of New York City's development of its Delaware Supply System. When completed in 1963, the third stage will add about 310 million gallons a day to the city's water supply.

By the middle of this year, the Board of Water Supply expects to advertise bids for the three remaining big contracts in third-stage development: Cannonsville Dam, intake works at Cannonsville Reservoir, and outlet works at Rondout Reservoir.

Cannonsville Dam and reservoir will cost about $60 million. The dam will be a rolled earth embankment about 1,500 ft long and 175 ft high. It will impound about 280,000 acre-ft of water from a 450-sq-mile area drained by the headwaters of the Delaware River's West Branch.

From Cannonsville Reservoir, the new tunnel will carry water to Rondout Reservoir, a collecting basin built as part of the Delaware Supply System's first stage. Also feeding into Rondout are Neversink Tunnel from Neversink Reservoir (first stage) and the 25-mile-long East Delaware Tunnel from Pepacton Reservoir (second stage). Rondout feeds into the city's supply system through the Delaware Aqueduct (first stage), the only tunnel ever built longer than the newly driven West Delaware Tunnel. The aqueduct runs 80 miles to the West Branch Reservoir in the Croton watershed.

The West Delaware Tunnel is not only an important water supply project; it has also been a proving ground for some new tunneling equipment and techniques.

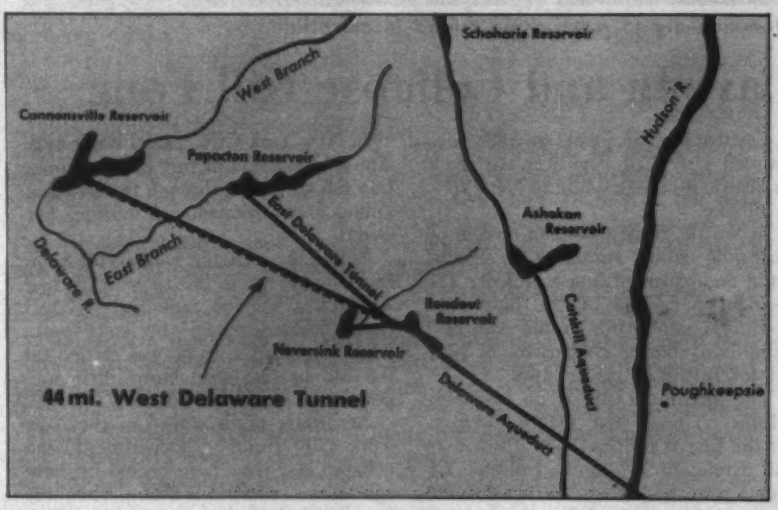
Both the major tunnel-driving contractors (Drake-Grafe-Winston-Tecon-Conduit and MacLean-Grove Brewster) used unloaded burncuts extensively in shooting the Catskill Mountain gray standstone and shale. The Drake group used two 5-in.-dia bores as unloaded center relief holes. MacLean-Grove used a single 8-in. hole.

That technique, little used in the construction industry prior to this job, showed good results: less overbreak, more concentrated muck, less protection required from flyrock, and more muck per shot.

Both groups made fast progress. The Drake group chalked up a record advance (since surpassed) during one six-day week—83 ft a day on the average (ENR June 26, 1958, p. 28).

MacLean-Grove proved out two

Miners peer through unobstructed bore after final shot.



44-mile tunnel is major link in New York City's water supply system.

. . . Big tunnel was a proving ground for new mining methods

equipment innovations also: a precussive down-the-hole drill for horizontal operation and an air heater for the drill supply to prevent fogging at the face.

The drill was designed to sink an 8-in. hole. It was modified for wet operation. Ingersoll-Rand has since built similar equipment to sink 10-in. holes.

The air heater raised the temperature of the air being fed to the drills from about 70F to 180F. Expansion cooled the exhaust air from the drills to 75F or 80F, well above the dewpoint. The more common practice of using unheated air produces a chilled exhaust in which the water vapor condenses and fogs up the air in the vicinity of the face, requiring extra ventilating capacity. Heat has been used on occasion to prevent icing in the drill, but this is believed to be the first instance of its use for atmospheric moderation. The heater was located under the deck of the jumbo. It operated on electric power, fed into the tunnel mainly to operate the mucking machine.

Another new equipment item introduced on the job, this one by the Drake group, was a mucking machine with a six-segment orange-peel-type grapple (made by Joy Manufacturing Co.).

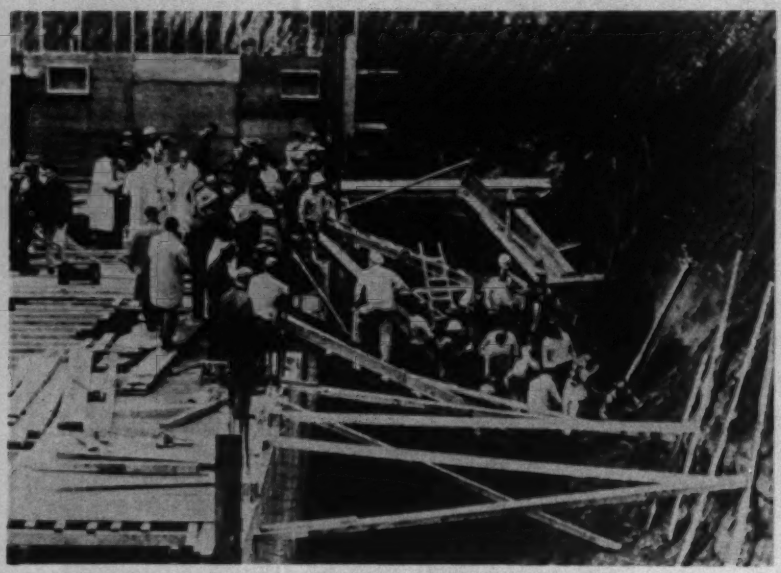
Completion of the third stage of the Delaware Supply System will take care of New York City's water supply needs until about the turn of the century.

Delaware development began in 1937. The first stage was completed in 1953. It added 235 mgd to the city's supply. The second stage was finished in 1958. It added another 375 mgd.

First and second-stage costs totaled about $410 million. The third stage is expected to cost about $180 million over-all.

The West Delaware-Tunnel work was divided into five contracts. Two contracts totaling $35.7 million and involving 19.5 miles of tunnel went to Drake-Grafe-Winston-Tecon-Conduit, a joint venture of Johnson Drake & Piper Corp., Grafe-Callahan Construction Co., Winston Bros. Co., Tecon Corp. and Conduit & Foundation Corp. The same group less Grafe-Callahan and under the name West Delaware Tunnel Constructors took two more sections totaling $43.9 million and 19.5 miles. The remaining 5-mile section went to a joint venture of MacLean-Grove Co. and George M. Brewster & Son.

All work is carried out under supervision of the Board of Water Supply, Arthur C. Ford, president, Stanley M. Dore, chief engineer, and N. L. Hamond, deputy chief engineer in charge of construction. Top men on the job for West Delaware Tunnel Constructors are Clancy O'Dell, project manager and R. P. King, chief engineer.



Workmen dig to reach three buried in earthslide.

Cave-In and Collapse Kill Four

Construction accidents on each coast claimed a total of four lives last week. In Seattle it was a cave-in; in New York, a collapse.

In Seattle, three workmen died in an earthslide while trimming a footing pit at an apartment house project. The accident happened at the base of a 36-ft-high sand bank in the rear of a $2-million cooperative apartment project for Rochdale House, Inc.

The apartment site is on a sloping hillside. Crews had placed concrete for the first two floors. The third floor will extend back into the hillside. Laborers were preparing footings for this section when the slide, involving 5 or 6 cu yd of wet sand, let go.

The 3/4:1 bank slope had been considered safe by the State Department of Labor and Industry but a department spokesman said more work was done at the base after approval.

Baugh Construction Co. is general contractor for the project. George Bolotin is architect and George Runciman is structural engineer.

In New York City, a steel water tank atop a Manhattan factory under demolition fell six stories through the building killing one workman and injuring five others.

Before the accident, workers for Avon Building Wreckers, New York City, had removed a wooden tank and its steel frame located above the steel tank. The wood tank's frame was carried on the wall-bearing steel beams that supported the steel tank below it.

According to an official of the New York City Building Department, the collapse may have been caused by damage to the supporting beams when the framework above was burned away.

The beams appeared to have been in good condition, well painted and with no evident corrosion. Bearing seats in the masonry walls also appeared generally sound.

The falling tank carried a large part of the building's timber floor framing with it as it plunged through the six stories to the basement level of the factory building.

New York City Completes Brooklyn Expressway Link

The last Brooklyn link in New York City's $126-million Brooklyn-Queens Expressway opened to traffic last week. The 1.2-mile stretch cost $15.5 million to build and $3.3 million for right-of-way.

The inter-county expressway has only one more segment to be built, a 3,700-ft section in Queens that will cost $9 million. Construction will start on it in the fall.

When completed, the Brooklyn-Queens Expressway will connect the Brooklyn-Battery Tunnel with Grand Central Parkway, near LaGuardia Airport.

Test vehicles roll seven days a week, as . . .

AASHO Road Test Moves into Last Lap

The $24-million AASHO Road Test at Ottawa, Ill., is accelerating operations to gain more load applications before test traffic is halted next summer. The number of trucks operating on the test loops has been increased by about 60% and traffic now is rolling seven days a week.

A project spokesman said the action is the result of recommendations made by a special subcommittee of the American Association of State Highway Officials at its Boston meeting last October.

A fleet of 78 vehicles has been used in the testing operation with 12 vehicles operating on each of the five traffic loops and the remainder on stand-by. Traffic operated about 18½ hours a day, six days a week.

By last week 6 million miles of test traffic had been accumulated since traffic began in the fall of 1958. At the same time more than 375,000 axle load applications had been recorded on each of the 836 test sections of rigid and flexible pavement. Each passage of a test truck represents two load applications, since the trucks carry a test load on each of two single or tandem axles.

Traffic will continue to be shut down about 5½ hours each day, to allow for pavement and vehicle maintenance as well as research studies.

The present schedule calls for test traffic to continue through the winter. Tentative plans call for ending traffic about July 1. Then will follow an estimated three months of special post-traffic tests, during which time certain types of military vehicles will be operated over the test pavements and bridges.

Data analysis and report writing are scheduled to be completed by the spring of 1961. Certain test results are being submitted to the Bureau of Public Roads for use in studies of vehicle weight limitations and highway-user taxation. Reports on the BPR studies will be presented to Congress in January 1961.

No data or detailed information on the performance of the various pavements or bridges have been released. The Highway Research Board (meeting in Washington this week) is said to be convinced that release of data prior to completion of the tests is unwarranted and might lead to misleading conclusions. Final reports won't be published until 1961.

Three main experiments are under way at the test site. They involve rigid pavements, flexible pavements, and short-span bridges. Numerous special studies are being carried out as well.

The over-all objectives of the program (ENR June 20, 1957, p. 25) are to determine the significant relationships between performance of the pavement sections and application of the test loads. In simpler terms, it is to evaluate the accepted theories of pavement design both flexible and rigid, and to develop better designs.

In the pavement experiments some test sections were underdesigned and some were overdesigned. Each experiment is independent and requires separate analysis. All 18 bridge spans included in the test were underdesigned. Each span is considered a separate case study.

Test vehicles range from pick-up trucks with 2,000-lb single axle loads up to large tractor and semi-trailer combinations with 30,000-lb single and 48,000-lb tandem axle loads. Traffic operates on five test loops in 10 lanes. All vehicles in any one lane have identical axle loads.

The test vehicles are driven by men from a special U. S. Army Transportation Corps unit stationed near the site. Currently, about 160 engineers, scientists, technical and maintenance personnel are employed full-time on the project.

During the past year there has been some distress and failure in pavement sections and bridge beams, according to project officials. But this was expected, and is important to the success of the experiments.

Maintenance of the test sections has been a continuous problem. It was especially so last spring as the frost went out of the supporting subgrade. Close daily inspection was needed. It was done by a four-man team of project supervisors. They determined by visual inspection and measurements which sections had to be taken completely out of the test and rebuilt to keep trucks going over them. Decision was also made on-the-spot as to what test sections needed minor maintenance to continue in the tests.

As trouble spots developed in pavements, especially during the night hours when repairs were more difficult, government-surplus pierced-plank steel airfield landing mats were laid over the areas. They were covered with about 2 in. of gravel to keep traffic going to the end of the shift. Then during the ensuing 5½ hr between schedules, more extensive repairs were made.

Last winter the maximum length of time that testing was shut down due to snow and ice did not exceed 24 hr, at any one time.

The gigantic job of analyzing the test results is kept as nearly current as feasible. In fact, analysis of test data was started at the same time as the test trucks began to roll in the fall of 1958.

Electronic computers are playing important roles in analyzing the various data. To date 35 programs have been written for this type of analysis. One such program was so complicated that it took two weeks to set up. It deals chiefly with longitudinal profiles of the pavements under test traffic and totals 18 machine hours of operation some weeks.

The road test is financed by the state highway departments and other interested groups (ENR June 19, 1958, p. 52). Over-all administration and direction is furnished by the Highway Research Board of the National Academy of Sciences—National Research Council. W. B. McKendrick, Jr. is project director; William N. Carey, Jr. is chief engineer for research. I. M. Viest is bridge research engineer.

Steel: Higher, but When and How Much?

Steel prices will go up—but how much, when and on what items?

It's a safe bet the impact of wage increases won by labor will be deferred until December 1 or Jan. 1, 1961. This is because the steel manufacturers will be paying only a small portion of the total wage-benefit increase during the first 11 months of the 30-month agreement (see p. 110).

Construction should benefit from another year with no increases. Since mid-1958 constructors have enjoyed the longest period of stable prices since price controls of World War II.

When the boost in steel prices comes, it should be substantially less than those posted in 1956, 1957 or 1958. Those increases reflected much larger wage boosts granted under the previous three-year contract signed in 1956. Cost of the new package is about half as great as the rise in steel labor employment costs under the old contract.

The second round of wage increases won't come until October, 1961. It could bring another boost in mill prices, although much will depend on the amount of progress achieved in boosting productivity between now and then.

Considering the next 30 months as a whole, steel increases are likely to come relatively late, compared to 1956-1958. Then, steel prices moved up with wage increases at the beginning of each 12-month period.

The delayed action should help slow the 1960 construction cost rise and also retard the climb in the first nine months of 1961.

A good guess is that the total increase in base mill prices of standard structural between now and Junt 30, 1962, will be about $9 a ton. That compares with the $18 per ton increase registered in the 1956-1958 period. However, there may be additional increases in steel costs to contractors if extras are upped. That happened in the 1956-1958 period. It is difficult to assess the probable dollar amount per ton of such increases.

On the issue of work rules, labor and management made some progress. There is a flaw, however. While joint labor-management committees will be established to work out changes, there's no machinery to bind the parties to agreement on proposed changes. Progress will depend on how determined labor is to help raise productivity. On such advancement depends the size and time of future steel price increase.

Speculation on price moves cannot ignore the political box in which the industry has been placed. Any price move at all, has political implications.

If the steel industry holds the price line entirely, smaller companies will be dangerously squeezed, thereby leading to merger moves. These would automatically draw the fire of federal antitrusters.

But if the industry's major companies raise prices, Sen. Estes Kefauver (D., Tenn.) could pounce on the increases as evidence that steel is a monopoly using its power to charge unwarranted high prices.

If only small companies increase prices (they will need an increase more than the bigger companies to cover the latest wage hikes), they will lose business to their big competitors.

Again the industry would be threatened by attack from the trust-busters who are against further concentration in the steel industry.

Imports of steel are a real factor for the steel producers to consider before raising prices. The difference in price between the domestic and foreign product is relatively large.

Foreign producers have cut deeply into some markets once dominated by domestic manufacturers.

Higher prices for the domestic product would encourage greater use of the foreign steel. U. S. producers will not ignore that economic fact of life.

Budget Surplus Not for Building

A tight rein on spending was reaffirmed by President Eisenhower in his State of the Union address to Congress last week. The message forecast a $4.2-billion excess of revenues over expenditures for the fiscal year that begins July 1.

But the President held that the predicted surplus should be applied strictly to reduction of the national debt. None of it, he made clear, would be used with his approval for financing new or existing federal programs.

School construction was the only proposed program marked out for special attention in the message. The President held firm for this previous prescription in this field—federal guaranties and federal loans to assist fund raising by poorer school districts that cannot get investment houses to take their bonds. His words chilled the chances of Administration compromise on federal school-aid bills that are already part way through the House and Senate.

For other programs, the message made plain, the President will hold firm to the tightly drawn budget figures he will submit to Congress next week. These budgeted amounts are higher in some areas than they are for the current year, he pointed out. But the government's over-all outlays will be held to a planned total of $79.8 billion—about $1 billion higher than for this fiscal year, while estimated receipts will bring some $84 billion into government coffers.

Resources development projects of the Army Engineers and the Reclamation Bureau make up one field of federal activity where appropriations and expenditures are bound to rise. Mounting costs on the large number of new starts that Congress voted in the last two years call unavoidably for increased outlays in fiscal 1961.

Military construction, on the other hand, is due to take a cut of some 10% below the current year in the budget that will go to Congress next week. The Administration made selective reductions in some military activities, including construction, while increasing others within a defense budget ceiling of $40 billion.

There is no new money for housing programs in the Administration plan, the message indicated. The Rains bill in the House, proposing to repeat the 1958 device of setting up $1 billion in Fannie Mae to buy FHA and VA mortgages on new low-cost houses, would be stopped by the White House. But the President might just possibly go along with Congress in restoring exhausted authority for making college housing bans.

Authority Can Be Sued For Damages Says Court

An authority is not an arm of the state, but a separate body that may be sued for damages, according to a recent ruling of the New York State Supreme Court.

Residents of a village through which the New York State Thruway runs asked for an injunction that would keep trucks, buses and tractor-trailers off the Thruway at night. They claimed the noise, fumes, lights and vibrations constituted an actionable nuisance.

Authority lawyers moved for a dismissal on the grounds of sovereign immunity. The justice ruled that the complaint was legally sufficient, but refused the injunction. He said a trial was needed to determine the facts in the case.

Legal departments of the various New York State authorities expect a rash of suits to follow.

Most likely targets are the airports run by authorities.

Bridge Pier in Wrong Place Is Moved

What do you do about a 170-ton, 3-column bent built to support a highway overpass, but built in the wrong place? Answer: Pick it up and move it to the correct location.

This is what was done last week when this situation arose in Akron, Ohio, during construction of a bridge over a new expressway.

Construction of the bridge had been under way for several months before it was discovered that the bent was 4 ft out of position, along the longitudinal axis of the bridge. Crews of the Ohio Department of Highways staked the bent and the contractor, Harry Miller, Excavating Co., built it where the stakes indicated.

Ordinarily the design of the superstructure might have been altered to fit the as-built location of the bent. But this ready solution was not possible because the design calls for a ramp to pass between this bent and the abutment. The misplaced bent didn't allow enough room for the ramp.

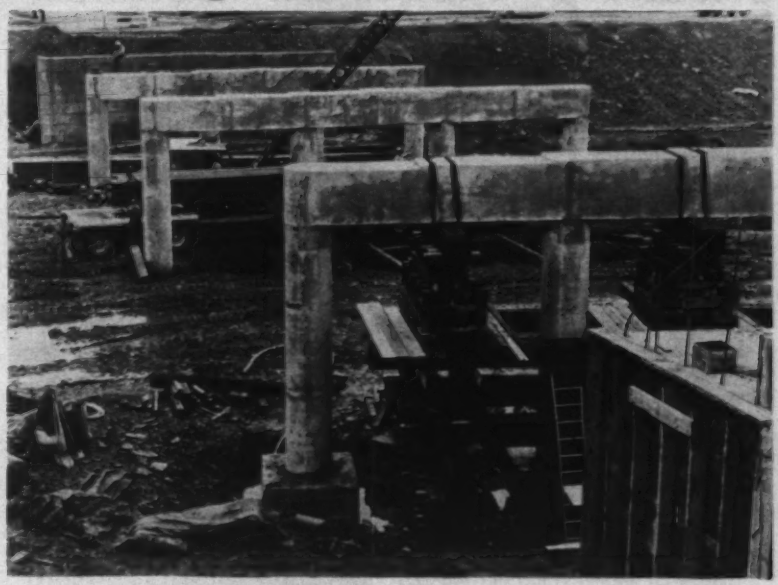
Obvious solution was to tear down the bent, and build a new one in the correct spot. Estimated cost of this procedure was $7,000.

Not so obvious was the possibility—since the bent rests on spread footings that in turn rest on rock—of breaking the footings loose from the rock, picking up the bent, and moving it laterally. Estimated cost of this procedure was $3,500. Clearly a calculated risk, engineers of the Ohio Department of Highways decided to take the gamble.

Contract for moving the bent was awarded to Frank W. Madden Co., of Akron, experts in heavy moving.

First step was to excavate around the spread footings and to the rock at the new location. Effect was, of course, to extend the original foundation pits far enough to permit lateral movement of the bent.

Madden workmen then built heavy cribbing on both sides of the center columns of the bent, up to the approximate level of the tops of the spread footings. On top of each crib, they installed two rectangular steel plates; in turn, the plates supported a pair of parallel steel rails. On top of each pair of steel rails were placed a number of steel rollers (bars of circular cross section). Effect was to provide two parallel tracks over which the bent could be rolled. The bent had to be rotated slightly, too, but movement was essentially in a straight line.



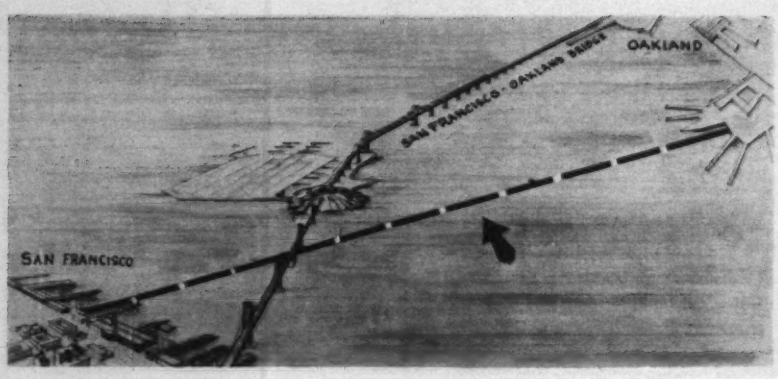
HEAVY CRIBBING, jacks and steel rollers broke footings loose and moved an entire concrete bent laterally 4 ft to its designed position.

On top of the rollers was placed a heavy timber, parallel to the centerline of the bridge. Heavy timbers and cross blocking were then placed so as to distribute the load of the bent over the two cribs, when the bent was lifted. Individual cribs were then built on top of this transverse structure, to within about 3 ft of the underside of the reinforced concrete bent cap. Cribbing was arranged so that upward load would be applied midway between the piers.

Two heavy timber headers were then lashed to the underside of the bent cap. Jacks were placed on top of the cribs and cross pieces installed to fit.

To break the footings loose from the rock, load was applied to both sets of jacks at the same time. Sufficient force was exerted to break the concrete loose from the rock, and to raise the entire bent vertically about 1 in.

Once the footings were broken loose, the entire bent, supported by the jacks and cribbing, was pulled by chain blocks and slid along the steel rollers into its new (and correct) position. It was then lowered back onto the rock layer, and new concrete placed around the old footings. Apparently completely successful, the entire operation took about five days.



Route for a San Francisco rapid transit tunnel is checked as . . .

Seismology Probes Bay Bottom

Designers of a proposed 4.3-mile rapid transit tube under San Francisco Bay are making the first use of underwater seismology as a tool in planning a project of this kind.

The tube is the key element of a 125-mile rail network planned by the San Francisco Bay Area Rapid Transit District.

The system will serve five counties surrounding the bay.

First work on subsurface investigations for the bay tube began last week. To cost $125,000, it includes an underwater drilling contract held by Ben C. Gerwick, Inc., San Francisco. Among other things, the drilling will provide holes for installation of seismological instruments. This work is expected to be completed in about six weeks. Recording of seismological data will begin by March 1.

Gerwick's contract includes borings for taking undisturbed samples for analysis by soils engineers and borings to develop elastic properties of the underlying material by geophysical methods.

The seismological instruments to be used are geophones, recording devices widely used in oil exploration. They will be provided and installed by United Electrodynamics, Inc., Pasadena, Calif. The geophones have not commonly been used in seismological studies.

Nine of the instruments will be installed. Three will be placed in each of three different levels and arranged to record movement from each of three different directions. The top group will be about 150 ft below water surface in soft bay mud. The middle group will go in a stiff clay formation about 50 ft lower. And the deepest group will be placed in rock about 250 ft below water surface.

The geophones will be located near one of the piers of the San Francisco-Oakland Bay Bridge. Cables will extend from the bridge. Recording devices will be installed in the offices of Bechtel Corp. in downtown San Francisco.

The data recorded by the geophones will be correlated with data from University of California seismographs installed in various places around the bay area.

Professor George W. Housner of California Institute of Technology, consultant on the project, says that good information on the seismological characteristics of the underlying strata can be obtained from an earthquake of moderate intensity (about 4½ or more on the Richter scale).

Professor Housner feels that even if an earthquake of such intensity does not occur during the two years or so that the instruments will be in operation, reliable data can be developed by extrapolation of correlated information from temblors of minor intensity. In an earthquake area such as San Francisco there are often several quakes a day that measure only 1 or 2 on the Richter scale and are not felt at all.

The purpose of all the underwater investigations is to aid in design of the underwater tube. The tube will be built by precasting large elements in drydocks, floating them into place and sinking them onto pedestals and sand blankets. Diameter of the tube is expected to be about 32 ft to accommodate two rail lines.

The tube will probably be built in the stiff clay layer that underlies the soft mud. Thus the seismological data are important in determining the exact location of the tube.

The 1959 California legislature authorized expenditure of $115 million for the tube with financing to be supported by tolls on the San Francisco-Oakland Bay Bridge. This expenditure ($84 million for the tube and $31 million for its approaches) still depends upon approval by voters in the five-county district of general obligation bonds amounting to at least $500 million to provide a complete rapid transit system.

The transit agency plans to submit such a proposal to the voters at the November election.

A joint venture of three engineering firms called Parsons, Brinckerhoff-Tudor-Bechtel is now planning the complete 125-mile system. The combine includes Parsons, Brinckerhoff, Quade and Douglas of New York and Tudor Engineering Co. and Bechtel Corp. of San Francisco.

While the underwater exploration goes on, Parsons, Brinkerhoff-Tudor-Bechtel are proceeding with other phases of their design studies.

These include:

- Route selection and development. A basic system has long been established, but refinements in locations are needed for accurate estimates.
- Power and propulsion. Motive power is almost sure to be electrical, but PBTB have studied all kinds of power, including nuclear.
- Transit methods. This includes selection of equipment and consideration of such things as monorail vs. conventional rail.
- Automatic train control. The system is planned for 30,000 seated passengers per hour per track using 70-mph trains at 90-second headways. Precise control is of great importance.
- Traffic and revenue. How many passengers and how much they will pay is of prime importance in the system design.

Interstate Progress: 5,332 Miles Built So Far

U. S. roadbuilders have constructed 5,332 miles of highway and 4,241 bridges at a cost of about $2.1 billion under the federal Interstate Highway Program as of Nov. 30, 1959, according to a Bureau of Public Roads report.

The program, now about three and one-half years old, has under construction 4,691 miles of road and 4,725 bridges. The cost of these projects is about $2.91 billion.

Under the ABC program, which provides for federal aid on a 50-50 basis for primary and secondary highway systems and their urban extensions, 80,618 miles and 13,884 bridges have been completed since July 1, 1956. Cost of the work has been $4.9 billion.

The full $400 million in "D funds" made available early in 1958 to speed up the highway program and stimulate employment was awarded to contract before the end of 1958. Total construction completed under this program covers 11,801 miles and 1,284 bridges. The work so far has cost $577 million, including state expenditures.

Truss Moved in by Barge . . .

. . . Will Carry Coke Conveyor

Hoisting a 239-ft truss span, contractors for Republic Steel Corp. have crossed Cleveland's Cuyahoga River with a bridge that will carry coke on a belt conveyor.

Designed and constructed by McDowell Co., Inc., Cleveland, the conveyor will replace previous train hopper-car haulage. Currently coke is transported by hopper car from the steel company's coke plant on the east side of the Cuyahoga River to four blast furnaces on the west side.

Completion of the project is expected by late spring. When in operation, the conveyor's 48-in. belt, its three flights totaling 2,593 ft, will have a capacity of 300 tons of coke an hour, traveling at 240 ft a minute.

The conveyor will be carried in a completely enclosed gallery 12 ft wide at the bottom and varying in height from 10 to 16 ft. Over much of its length, the belt will be 100 ft above ground level.

McDowell engineers used an IBM computer to arrive at the optimum compromise of even pier spacing and straight belt runs with existing site conditions. The result was a substantial saving in engineering and construction costs.

Of the eight truss spans supporting the first belt, all but one were fabricated as identical truss designs. Five of the nine spans for the second belt were identical, and two of the three spans for the last belt were identical.

This standardization made possible maximum use of shop assembly in the structural steel work and speeded on-site erection. Welded subassemblies were used for all shop structural work. High-strength structural bolts were used in field construction.

The first section of the belt conveyor, 833 ft center to center, will be carried alongside Republic's coke plant in a straight line inclined at an angle of 27 min.

The second belt, which will be 1,078 ft c-to-c, joins at a 20 deg angle and carries through to the east pier at the river. At peak grade, this belt will have an incline of 3 deg, 52 min.

The final conveyor flight, 682 ft c-to-c, carries the coke over the Cuyahoga River, and on to the blast furnace high-line. It drops the coke into two storage bins of 300 tons total capacity, also under construction, which in turn gate feed to existing blast furnace high-line cars.

Coke is fed onto the first belt from a boom conveyor, newly installed by Koppers Company, Pittsburgh, at the screening station. This conveyor can feed either to the belt or to railroad hopper cars, which are to be retained for standby purposes.

Transfer from the boom conveyor to the main belt is through a ¾-in. steel plate chute lined with 3-in. abrasion-resistant brick, feeding through baffle plates to the belt. Similar provisions are made at all other transfer points in the belt system, which is designed to keep material breakage to the minimum as well as to reduce the amount of dust at transfer points.

The system is designed to handle coke in screenings ranging from ⅜ to 4 in. maximum size. Fines are returned to the coke plant through another belt system from the screening station.

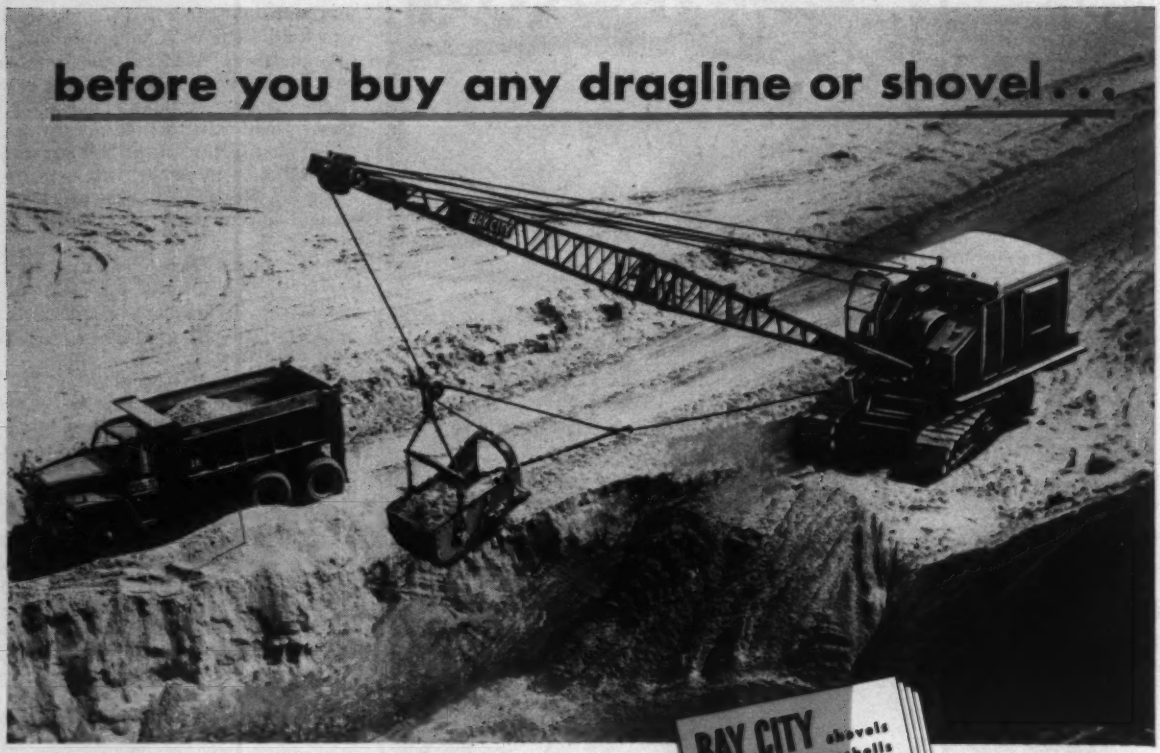
The conveyor belting will be 5-ply heavy-duty nylon-filled material, and will be installed with all-vulcanized splices. It is to be supported on standard troughing idler rolls set at approximately 5-ft centers. Return idlers are flat.

Primary system control is from the coke plant station. In addition, stop buttons are provided at each of the belt drive points, and continuous safety cable is run down each side of each belt for the complete length of the run.

Automatic electrical interlocks are provided for the drives. Controlled by a snubber pulley under each tail pulley, this system shuts off a preceding belt if the belt in front drops below its rated speed.

To preserve the condition of the coke, the belt is completely enclosed. A 12-ft underflooring is provided; sheeted truss assemblies form the side walls and peaked stainless steel roofing complete the housing.

before you buy any dragline or shovel . . .



Here is a Model 72 equipped with a 2-yard bucket keeping nine trucks hustling on a 20-mile highway relocation job. The "Performance Proved" BAY CITY loaded over 3000 yards per day.

. . . check the BAY CITY for low cost • big output • profit returns

Now you can see for yourself how the quality built, trouble-free, heavy-duty features of this convertible excavator can mean bigger profit for you—the BAY CITY story is in this big 16 page catalog. Write for it today and be ready for those big jobs ahead.

NEW finance plan for you . . .

BAY CITY now offers a new low-cost financing plan that makes it easy to put the "Performance Proved" BAY CITY equipment to work for you. Monthly payments up to 3 years on crawler machines . . . 5 years on rubber tire mounted machines. See your BAY CITY dealers, or write for details . . . today.

BAY CITY

THE WORLD'S BEST BUILT SHOVELS AND CRANES

BAY CITY SHOVELS INC., BAY CITY 1, MICHIGAN

282

Narrows Bridge Piers Awarded

New York City's Triborough Bridge and Tunnel Authority has approved the award of a contract for construction of tower piers for the $320-million Narrows Bridge between Brooklyn and Staten Island.

The job will go to a joint venture composed of J. Rich Steers, Inc., and Frederick Snare Corp., both of New York City.

The Steers-Snare bid was $16,527,975 for both piers. The combination also offered the lowest bids on an individual basis—$7,096,000 for the Staten Island tower pier and $9,846,000 for the Brooklyn tower pier.

Second low for both piers was Merritt-Chapman & Scott Corp., New York City, with a bid of $18,312,090. Second lows for the individual piers were the Fehlhaber Corp., New York City, tender of $7,184,615 for the Staten Island pier and a bid of $10,678,510 for the Brooklyn pier from a joint venture consisting of Raymond International, New York City, and Dravo Corp., Pittsburgh.

Ten bids were submitted to the Triborough Bridge and Tunnel Authority of New York for the bridge pier job. Five of the bids were from joint ventures.

Contracts will be let this year for the towers, anchorages and cables. Work on the anchorages, as well as the piers, will begin this year.

The Triborough Authority last month took over full control of the construction and financing of the bridge from the Port of New York Authority when it repaid $30 million that PNYA had advanced for construction.

The bridge over the entrance to New York Harbor will have the world's longest suspension span, 4,620 ft. It is scheduled for completion in January, 1965.

A 12-lane, double-deck structure, the bridge's center and end spans will have a total length of 6,690 ft.

Around the World . . .

• **Yonkers library**—Construction has started on a $1.8-million public library building in Yonkers, N. Y. The building features a series of concrete barrel shells as roof framing over the main reading room. Eli Rabineau of Yonkers is the architect.

• **Carolina program**—The Corps of Engineers will spend over $13 million in the North Carolina area during the first six months of this year. Projects for Army, Air Force and Civil programs will be awarded through March.

• **New Zealand aluminum plant**—A plant to produce 5,000 tons of aluminum sheet a year will soon be built near Auckland. The plant, which will cost about $7.5 million, will be the first of its kind in New Zealand. It is expected to begin production by 1961. Builders are the Northern Aluminium Co. of England.

• **Gorge High Dam suit dismissed**—A federal judge has dismissed Merritt-Chapman & Scott Corp.'s suit against the City of Seattle over Gorge High Dam. The contracting firm asked the court last summer to award it $2.4 million in damages and to cancel the contract (ENR Aug. 13, 1959, p. 28). In dismissing the suit as premature, the court apparently accepted the reasoning of the Seattle corporation counsel that damages can't be determined until completion of the contract.

• **Concrete for Smith Mountain**—Appalachian Power Co. has switched to concrete from an earlier decision favoring rockfill for Smith Mountain Dam. The dam will be on the Roanoke River 46 miles downstream from Roanoke, Va. The $45-million project will also include a smaller dam, of type still undetermined, 17 miles farther downstream. The main dam will be equipped with reversible turbines for pumping back into the reservoir during off-peak hours with surplus electricity (ENR Aug. 27, 1959, p. 32).

• **Aluminum increase**—A plant producing 22,000 tons of aluminum annually will go up in Mexico's Vera Cruz Province within two years. That's equal to Mexico's present annual consumption of the metal. Aluminum Company of America will erect the $20-million plant.

• **Carolina power plant** — Carolina Power and Light Co. will add a 240,000-kw-capacity generator to its plant in Goldsboro, N. C. Ebasco Services, Inc. of New York City was awarded the contract. Cost will exceed $20 million.

• **Giant steel plant**—The Italian government will finance a $304-million steel works to be built near the port of Taranto in southern Italy. Production will be one million metric tons annually. Construction time is estimated at two years.

Naval Architect Closes Suit For Building Design Fee

A naval architect's initial cruise through construction's choppy waters has foundered on a court decision. Drowned is a $6,400 fee.

H. C. Downer and Associates, Inc., of Cleveland, sued Westgate Realty Co. of Akron for payment of a 4% building design fee. Westgate had refused to pay because construction bids for the planned store building and parking ramp allegedly far exceeded the designer's cost estimate of $160,000. The structure was not built for that reason, Westgate said.

The Ninth District Court of Appeals at Akron, upholding a lower court's decision, rejected the claim on grounds that the naval architecture firm was practicing dry-land architecture illegally:

• H. C. Downer & Associates is a corporation.

• Architectural design is a profession, and state law prohibits practice of any of the professions by a corporation.

• Therefore, a corporation cannot legally enter into a binding contract for the performance of a professional service.

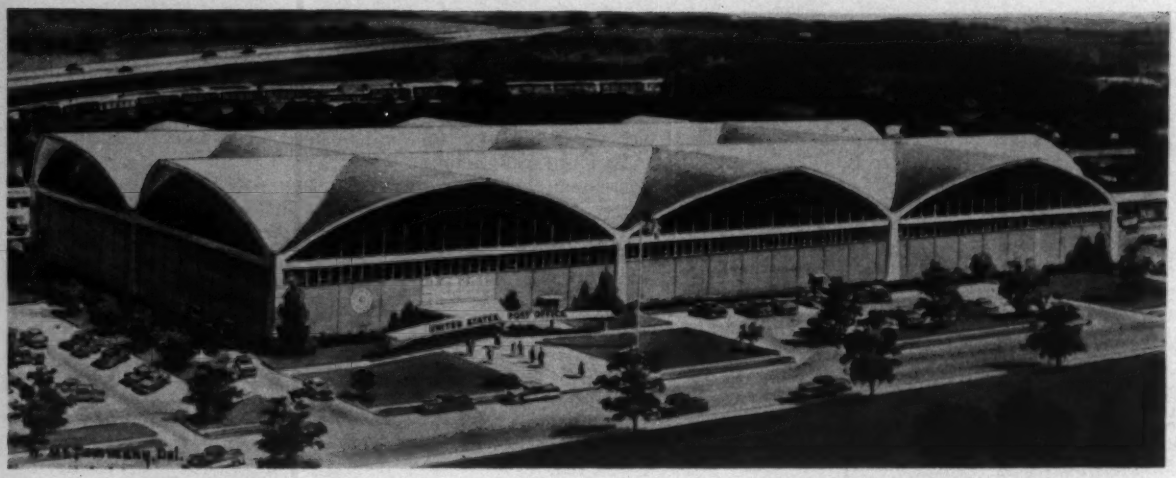
Company spokesmen would not comment on the decision, but they did say that the commission to design the combination store and parking ramp was the company's first venture into building other than ships.

Paradise Out of Bounds For TVA, Say Site Owners

The Tennessee Valley Authority is exceeding its powers in acquiring property for its new $100-million steam power plant at Paradise, Ky. So charges the P. & M. Coal Co. and other owners of the site. They want the court to set aside an order permitting TVA to condemn the land.

Their contention: The TVA act does not give the agency the right to acquire land for a generating plant anywhere except along the Tennessee River or its tributaries. The Paradise site is on the Green River, a tributary of the Ohio River.

The property owners also protest that the estimated value of $60,000 for the property is too little. The land is worth at least $1.5 million they claim.



First Mechanized Post Office

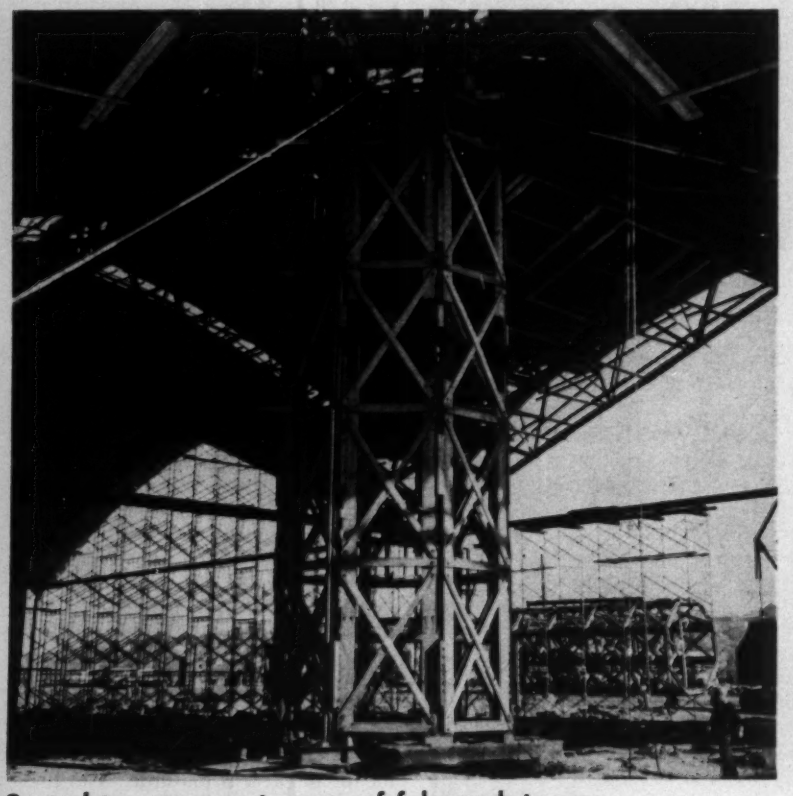
Precise coordination between contractor and engineer marks construction of a giant thin-shell concrete structure housing the nation's first mechanized post office in Providence, Rhode Island (ENR Feb. 12, 1959, p. 27).

Roof framing for the 420x300 ft building consists of six independent intersecting barrel shells, each 150x140 ft in plan separated by 2-in. expansion joints.

This scheme provides the large expanses of unobstructed floor space required by the electronically controlled mail-flow system. It also eliminates the exterior buttresses of conventional arches, which would have interfered with outside truck traffic.

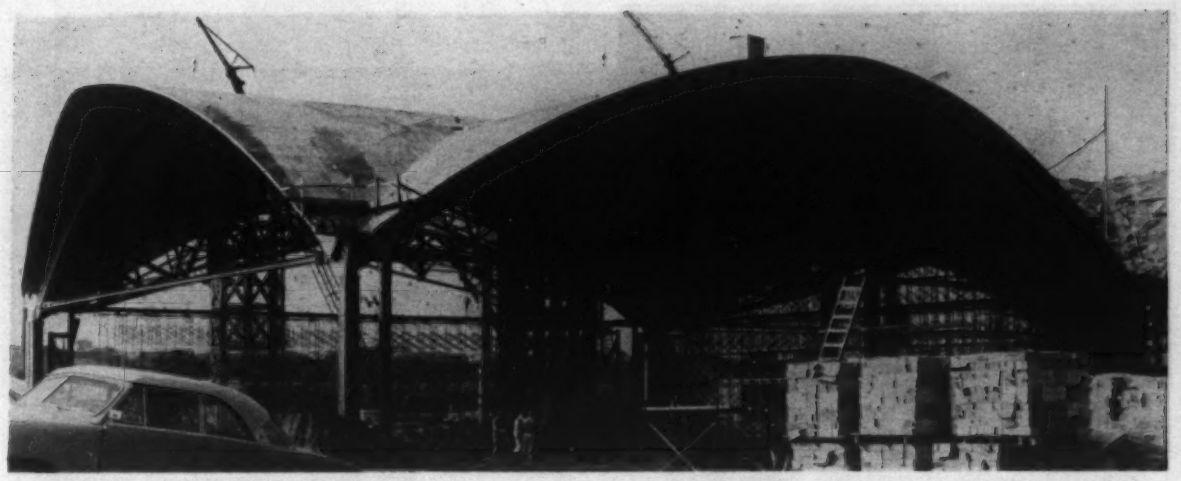
Only two groups of four interior columns are required for the entire roof area. Like the 16 exterior columns, interior columns are designed as fixed-base cantilevers, hinged at the top and free to deflect laterally. Sheer size of the building, combined with this unique flexible-support feature, made intricate operations of:

- Fabricating and erecting falsework to support the forms for the 6-in. thick shells.
- Casting the 800 cu yd of concrete in each roof unit.
- Tensioning horizontal tie beams,



Central tower supports maze of falsework trusses.

Crane swings 1-yd bucket up



Has Unusual Barrel-Shell Roof

which balance the tremendous thrusts of the edge ribs.

Falsework to support plywood forms for the parabolic thin shells consists of two identical sets of timber truss framing. Each set supports formwork for one shell unit. Concreting of the entire roof requires only two moves for each set of falsework.

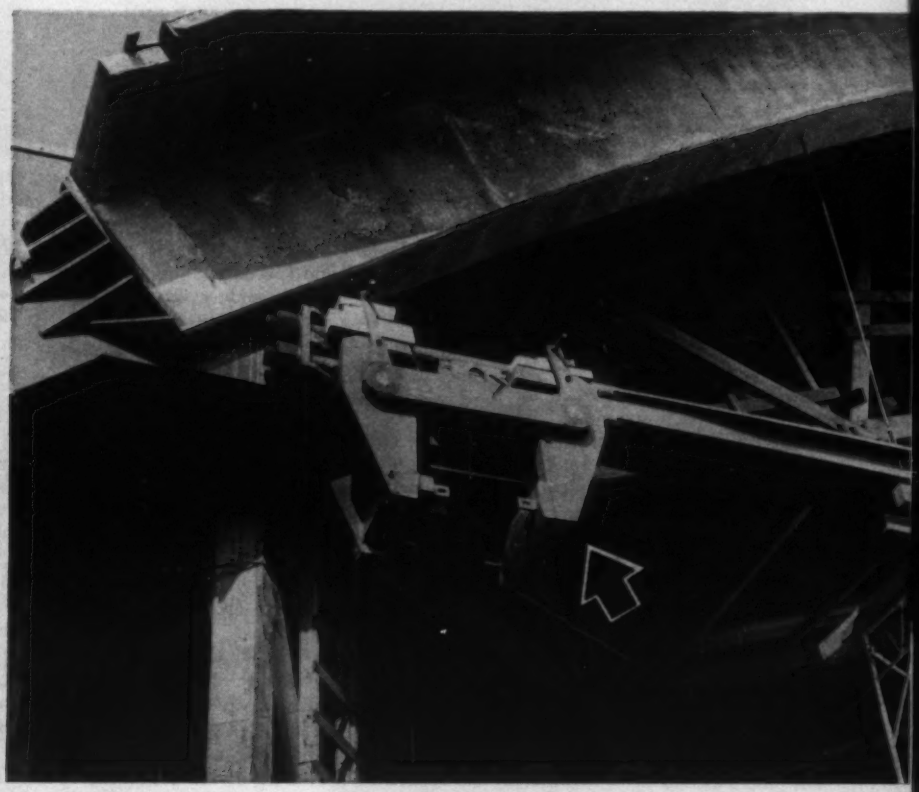
At the center of each falsework system stands a huge trussed tower, octagonal in plan. It was erected in two sections, spliced at mid-height with bolted plates. Falsework trusses frame between this central tower and eight peripheral timber columns.

Four pairs of valley trusses frame along diagonals of the 150x140 ft area. They are separated to permit forming of the 20-in.-wide diagonal stiffening ribs, which prevent buckling of the shell and distribute compressive loads at the column heads. The valley trusses are bolted to corner columns and to the central tower.

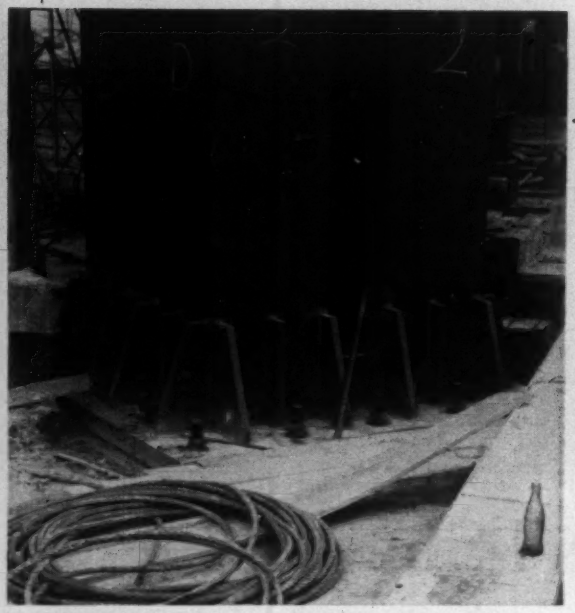
Bisecting the rectangular area in two directions are four pairs of ridge trusses, also bolted to the central tower and to peripheral columns.

Eight sets of four purlin trusses frame the eight triangular areas bounded by the ridge and valley trusses. Timber joists, 2 x 10's, 16 in. c-c, span between

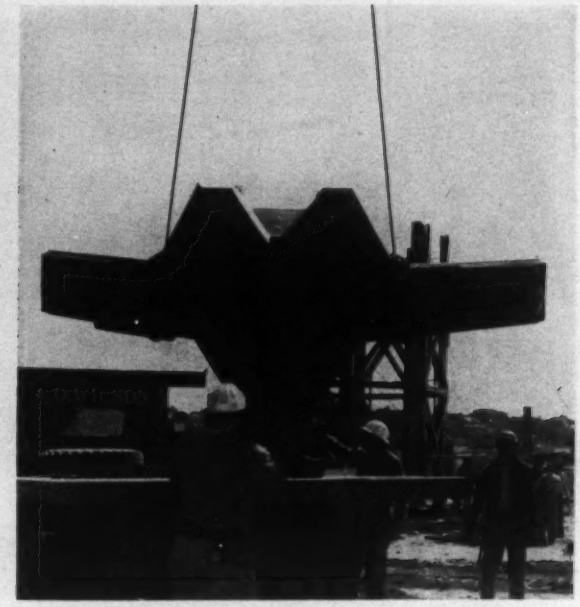
to roof for concreting.



"Nutcracker" is in position for tensioning tie beam.



ANCHOR BOLTS, 7 ft long and 2 in. in diameter, fix interior column base. Columns are 24-in. welded plate sections.



CRANE LIFTS five-ton column head. It seats on a curved cap plate over a 2½-in. dia pintle.

purlin trusses. Standard ⅜-in.-thick, 4x8-ft plywood sheets, nailed to the 2 x 10's, form the parabolic soffit of the 6-in. membrane slab.

Carpenters warp the panels slightly to form the curved surface. Each of the eight pie-shaped segments composing one set of falsework is isolated from adjacent segments. This allows for independent lowering at stripping time.

The central falsework towers required permanent foundations in areas without basement. In areas with framed ground-floor slabs, they were shored with steel-pipe screwjacks seated on a timber grillage at the basement floor.

Hydraulic jacks under the tower base allow elevation adjustment.

Camber at the center of each shell unit, where the diagonal ribs intersect, was 4 in. This comprised permanent camber plus an allowance for falsework deflection. Maximum deflection at any point during the concrete pour was ¾ in.

Placing the 800 cu yd of concrete for each shell unit posed many problems in mix design and field procedure.

The quantity of concrete and the difficulty of pouring, screeding and finishing the sloping surfaces made a monolithic pour impossible. Construction joints were located approximately 5 ft from the edge of each diagonal rib, where the slab haunch begins. This divides each shell into four triangular areas.

First pour in each unit includes edge and diagonal ribs and the haunched slab sections—a total of 540 cu yd. Concrete gangs started the pour at 6:30 a.m. and finished at 9:30 p.m. on the first unit.

On the second day after the first pour workmen placed the last 260 cu yd in the triangular slab areas.

Policemen, stationed at strategic intersections, sped delivery of concrete from the central-mix plant. Radio contact with the plant enabled the contractor to vary slump in casting the tightly-reinforced ribs.

At the site, four cranes with one-cu-yd buckets on 125-ft booms lifted the concrete to the roof.

Concrete specifications required high-early strength of 4,000 psi at seven days, a concrete weight of 110 lb per cu ft and a two-inch slump. Low slump facilitated placing of the steep roof slope.

The low slump attained through use of a low water-cement ratio reduces shrinkage and speeds attainment of design strength. To reduce shrinkage and creep further (important factor in designing thin-shells) the engineers specified a concrete aggregate of sand in combination with expanded shale.

The only admixture used was an air-entraining agent.

After test cylinders cured under job conditions had reached seven-day, 4,000-psi strength, steel workers tensioned the steel tie beams, 18 x 10 in. welded box sections. This operation had to precede stripping of formwork since the tie beams are an integral part of the framing system.

An ingenious device, the "nutcracker" (see photo), was used to transmit the jacking force during tensioning. It consists of a steel frame with two arms hinged at each end. These arms fit over a lug at the column head and a thick rectangular plated "suitcase" inserted through an opening at the adjustable end of the tie beam.

Jacking pressure squeezes the arms together and so tensions the tie beam.

Steel workers field-bolt the fixed-end connection of the tie beam with 24 1¼-in-diameter high-strength bolts. They tighten nuts on four 4½-in-dia. bolts at the adjustable end as tensioning proceeds.

Jacking proceeds slowly while field engineers observe lateral deflection of column caps and vertical deflection of vertical rods suspended in a grid-pattern from the 6-in. shell. Jacking continues until it produces dead load tension (700 kips for the 150-ft span) and ⅜-in. average movement of all four column caps inward on the diagonal.

But jacking is subject to these limitations:

- Ten percent overload.
- Deflection of 1 in. in any direction by any one column cap.

Both tensioning and relieving jacking pressure proceeds simultaneously on the four tie beams of each roof unit. Jacking pressure is relieved slowly until all tension is transferred into the four tie beams. Field engineers continue observing all movements in the structure. Only after complete release of packing pressure and after all movement stops can the falsework be lowered.

Workmen lower the pie-shaped falsework sections in opposite pairs about the center point of the unit. When the falsework sections clear the tie beams, 26 ft above main floor elevation, they are ready for transport to the next bay.

The engineers observed the rotation of the columns during tensioning to

No winter slowdown here with Columbia Calcium Chloride in the mix.

KEEP YOUR WINTER CONCRETE JOBS ON SCHEDULE WITH COLUMBIA CALCIUM CHLORIDE

Roads, bridges, buildings . . . no matter what you're constructing, if the jobs use concrete, Columbia Calcium Chloride added at the rate of 2% by weight of cement helps keep your cold weather jobs *moving*. Columbia Calcium Chloride benefits you in these three time-and-profit-saving ways:

Higher Early Strengths—At 40°F, you get 3-day strength in 1 day, 7-day strength in 3½ days. There's no cold weather lag in strength gain; your job stays on schedule.

Faster Initial Set—Under normal conditions, Columbia Calcium Chloride cuts initial set time from 3 hours to 1 hour. At lower temperatures, the effects are even more pronounced. You get finishers on and off the job faster, avoid costly overtime.

Early Form Removal—Rapid strength gain permits removal and re-use of forms in about half the normal time.

Get all these built-in, cold weather benefits for your concrete jobs.

Specify Columbia Calcium Chloride. For more information, contact our nearest District Sales Office or write our Pittsburgh address.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION

A Subsidiary of Pittsburgh Plate Glass Company • One Gateway Center, Pittsburgh 22, Pennsylvania

DISTRICT OFFICES: Cincinnati • Charlotte • Chicago • Cleveland • Boston • New York • St. Louis • Minneapolis • New Orleans • Dallas • Houston Pittsburgh • Philadelphia • San Francisco IN CANADA: Standard Chemical Limited

SERVICISED

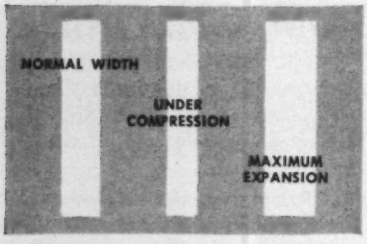
SELF-EXPANDING CORK

Joint Filler

- Keeps Joints Filled Under Maximum Contraction
- Widely Specified and Used in Bridge Structures and Canal Linings, Spillways, Sewage & Water Treatment Plants, Flood Walls and Tunnels

Servicised SELF-EXPANDING CORK is specially designed for projects where it is essential to keep the joints filled when contraction may open them up to more than original size. It's the joint material that actually "grows" and expands with the joint!

SELF-EXPANDING CORK is formed from clean, granulated cork particles securely bonded together by an insoluble synthetic resin binder. It is specially treated so that it will expand as much as 50% beyond original thickness. Fully compressible, non-extruding and resilient, Servicised SELF-EXPANDING CORK is available in ½", ¾", and 1" thicknesses; widths to 36" and lengths to 10 feet.



The above illustration shows how this material can expand to as much as 50% of its original thickness.

Write today for your copy of the Servicised Catalog. It contains complete information on SELF-EXPANDING CORK as well as many other types of premolded joint fillers.

SERVICISED PRODUCTS CORPORATION
6051 West 65th Street • Chicago 38, Illinois

. . . Mechanized post office—and how it works

check their design assumptions. Axial forces at each column head—edge-rib thrust, tie-beam tension, and column reaction—are theoretically concurrent. They should, therefore, produce no joint rotation.

To make the column head detail a true hinged joint, the engineers designed a double-curved cap plate with a 2½-in.-dia. pintel projecting 2¾ in. The pintel fits into a socket in the five-ton welded-plate column head.

Maximum measured rotation at any column head joint was 5½ min arc, justifying the design assumptions.

Under the main floor at the south end of the building, a basement, 300 ft x 140 ft, occupies one-third of the plan area. Maintenance shops, transformers, refrigeration plant and storerooms will be located there. Main floor framing over the basement is a 15-in thick waffle slab on 25x26-ft bays.

A two-story mezzanine, 40-ft wide, extends the entire 420-ft length of the building front. It provides 16,800 sq ft of floor space on each floor for public lobby, cafeteria, kitchen, and general offices. This is an independent, fireproofed structure, framed in structural steel and bar joists.

More than 1,000 friction piles carry building loads into the subsoil. Piles are 14-in.-dia corrugated steel shells, driven to an average cut-off length of 65 ft and filled with concrete.

Largest pile cap, 24 ft 6 in. square and 7 ft deep, is under the interior basement area column. A 12-ft-square pedestal brings this column base elevation to the level of the others to equalize theoretical deflections at the column heads.

Exterior foundation walls are grade beams supported on pile caps spaced at 20 ft c-c.

Exterior walls above grade are 8-in.-thick precast concrete panels, faced with brick after erection. The 10-ft-wide, 26-ft-high panels are cast at the site. Walls are laterally braced by a reinforced concrete walkway on three sides of the building and by the mezzanine floor framing at the front.

Window mullions connect to a steel plate cast in the soffit of canopies cantilevered off the exterior edge ribs of the roof shells. A sliding joint detail at the window head provides for 2-in. roof deflection.

Project Turnkey, the name given to the post office, will be a working laboratory for testing and improving mail-processing equipment and methods.

Mailflow in and out of the post office will be regulated from a central control tower, 26 ft high. Electronically operated conveyors will move mail through the entire process—from receiving, through culling, facing-and-cancelling, sorting and collecting, to the final sacking operation.

With the exception of a few tasks performed by human operators, mail processing in Project Turnkey is automatic.

The culling machine spreads raw mail evenly on a series of vibrating tables. An angled slide then shunts out packages and bulky pieces, leaving ordinary pieces for regular processing.

A vibrating holder shakes letters and post cards into alignment for facing and cancelling.

Electronic eyes in the facer-canceller machine telegraph ahead the location of the stamp and shunt mail through the proper channel.

Faced letters then move past six operators who assign them to one of 300 destinations with a keyboard code. Coded letters are then automatically conveyed to their proper destination box, which is emptied at regular intervals.

Processed mail is then ready for sacking.

Project Turnkey is the first stage in a postal modernization program that will eventually provide next-day delivery of a letter mailed anywhere in the U.S.

In addition to the main building, the 14-acre site includes a lubritorium, a heliport, railroad siding and loading platforms, and parking areas for employees and patrons.

Owner of Project Turnkey, Intelex Systems Inc. of New York City, will lease the plant to the Post Office Department for 20 years at $1.4 million annual rent. Intelex is a subsidiary of International Telephone and Telegraph of New York City.

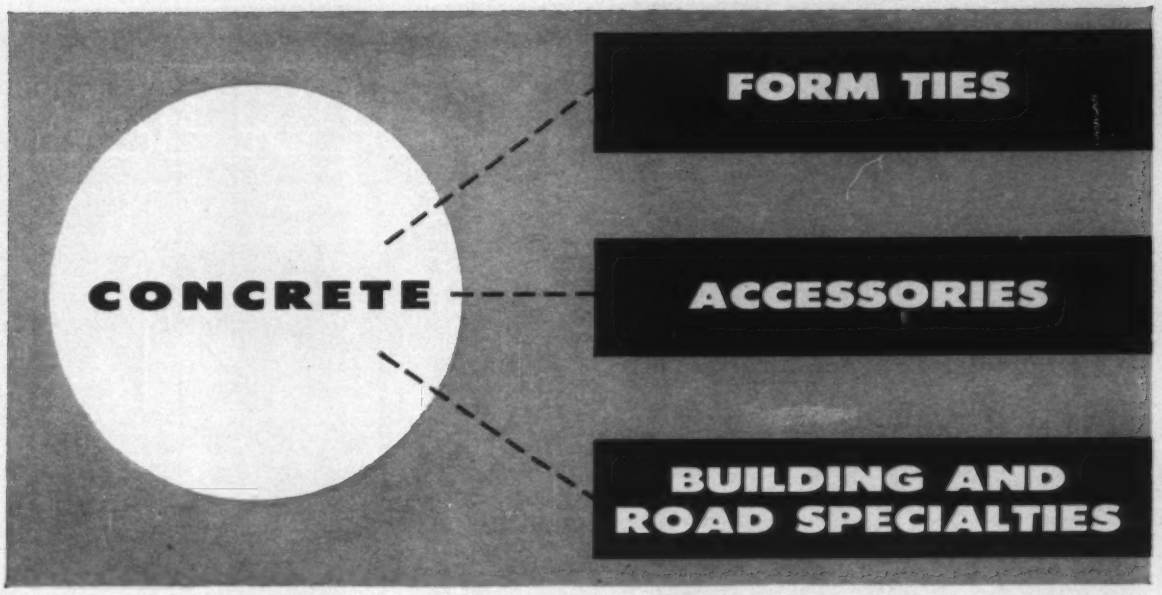
Total estimated cost of $20 million comprises $5.5 million for construction and $14.5 for mail-processing equipment.

Charles A. Maguire & Associates of Providence is the architect-engineer. Gilbane Building Co., Inc., also of Providence, is general contractor. Falsework subcontractor was Cartwright & Morrison, Inc., of Holcomb, N. Y. C. L. Guild Construction Co., Inc. of East Providence, furnished and drove the piles. Pawtucket Redi-Mix Concrete Co. furnished and delivered the 5,000 yd of lightweight concrete for the barrel-shells.

Gilbane's superintendent is Richard F. Martin; Cartwright and Morrison's, Stewart Morse. For Charles A. Maguire, Paul R. Peterson is project manager and Robert L. Pare, structural engineer.

Consultants on the barrel-shell design were MIT professors Robert Hanson, M. C. Holley and J. M. Biggs.

E. H. Roorbach is project manager for Intelex.



SPIROLOC Form Ties

SPIROLOC Cone Nut Assembly

The most positive internal spreader and form tie

Faster erection . . . Positive holding . . . Easier stripping . . . Greater tie strength for heavy construction. Fewer ties per sq. ft. of form area. Positive breakbacks. Permanent reuseable equipment.

TWISTYES

Combination wedge and bearing plate . . . easy application . . . won't twist or fall off — ample take-up.

SNAP TIES

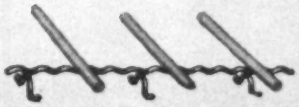
Curved ends speed installation and stripping . . . long slope wedge for ample take-up. Extra nail holes permit nailing clamp in any position.

Low cost ties for job-built or prefabricated forms. Used with or without walers. Accurate breakbacks. Choice of spreader washer.

FORM CLAMPS

2 Form clamps and a mild steel rod make a tie to handle any condition.
Wide clamp base gives more bearing on waler . . . won't "bite" at maximum loads.
Notched base permits nailing to waler.

REINFORCING BAR SUPPORTS



For complete information on all of these items plus Universal's complete line send for our catalog 759.

UNIVERSAL FORM CLAMP CO.

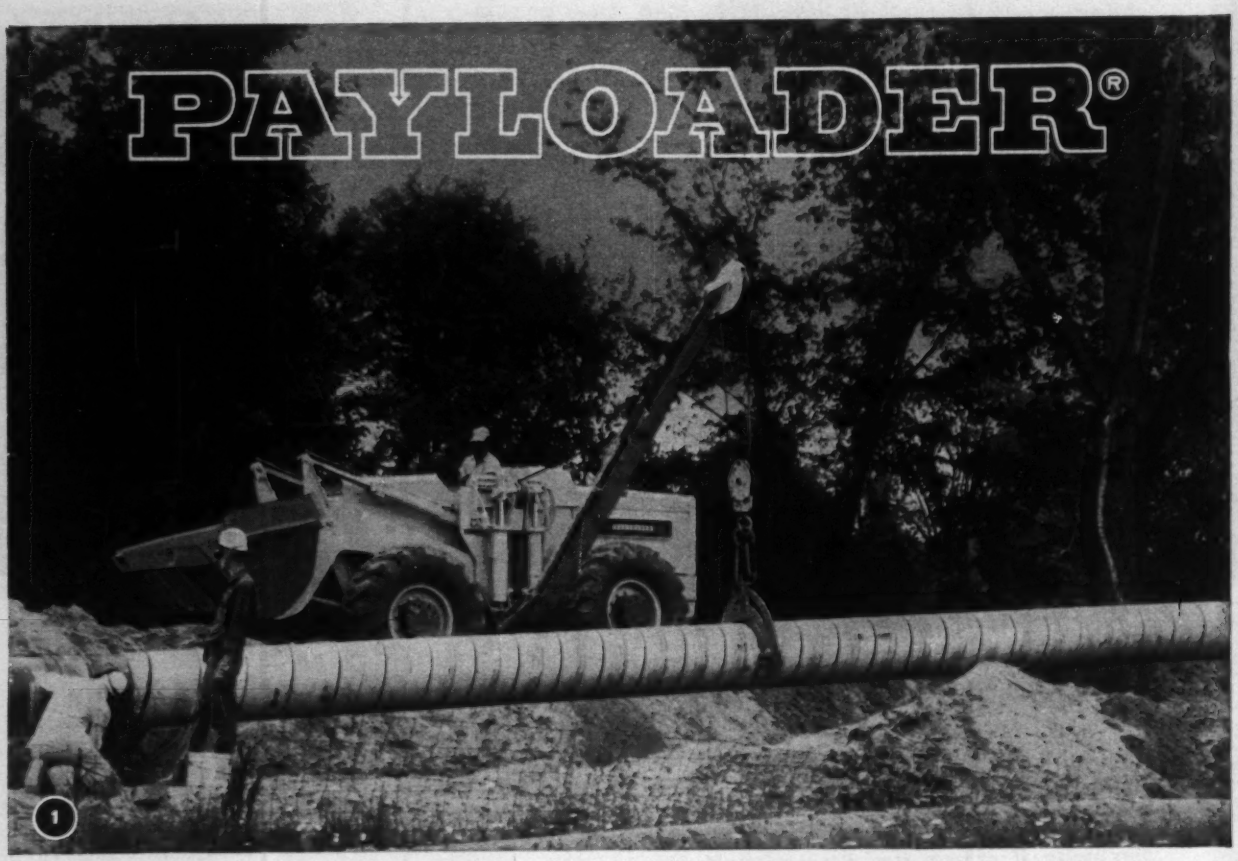
"Products from the Gold Tool Room"

1238 N. KOSTNER AVENUE · CHICAGO 51, ILLINOIS

BRANCH OFFICES and WAREHOUSES:

ATLANTA BALTIMORE CLEVELAND HOUSTON
LOS ANGELES SAN LEANDRO TORONTO

PAYLOADER®


1

2

3

4

5

MORE THAN A TRACTOR SHOVEL

No other tractor-shovel comes close to matching the all-around usefulness of a 4-wheel-drive "PAYLOADER" because it has the most complete selection of interchangeable attachments available, including several that are "exclusives" on "PAYLOADER" machines! These are *real working tools* that save time on-the-job and the high cost of single purpose machines:

1 SIDE-BOOM

Superior-Hough hydraulic boom lifts 5-tons, telescopes 10 to 16-ft. Does not interfere with bucket use.

2 HYDRAULIC BACK-HOE

Built exclusively for "PAYLOADER" by Wain-Roy. 190° working radius permits right angle dig and dump. Mounts front or rear.

3 FORK-LIFT

Forks adjust to fit varied size pallets or loose loads of lumber, sheeting, pipe, logs. Easily interchangeable with bucket.

4 ROTARY SNOW PLOW

Built by Ram for "PAYLOADER" tractor-shovels. Separate power unit drive. "V" and blade plows available also.

5 LEAF LOADER

Another "PAYLOADER" exclusive by Ram. Individual hydraulic motors power reel and conveyors. Picks-up 90% of bulk.

6 VIBRATORY COMPACTOR

Jackson vibrators efficiently develop specified densities in all granular soils. Electric motors on each of four 30-in shoes.

7 BLACKTOP SPREADER

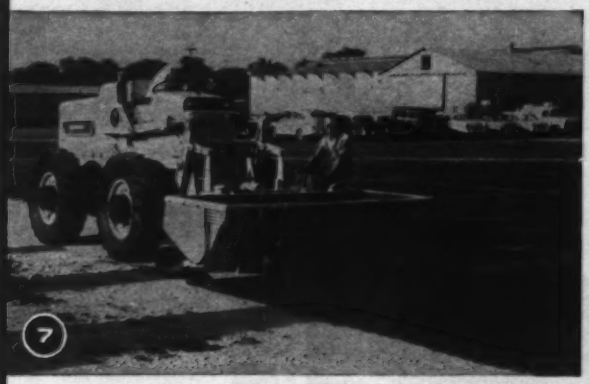
Exclusive Ram unit has separate power unit. Lays up to 8-ft. wide, adjusts 0 to 48-in., 0 to 6-in. deep. 2-cu. yd. hopper.

8 "FOUR-IN-ONE" BUCKET

Patented Drott bucket is a "PAYLOADER" exclusive on rubber. Does many shovel, clamshell, scraper and bulldozer jobs.

HOUGH®

THE FRANK G. HOUGH CO.
LIBERTYVILLE, ILLINOIS
SUBSIDIARY — INTERNATIONAL HARVESTER COMPANY



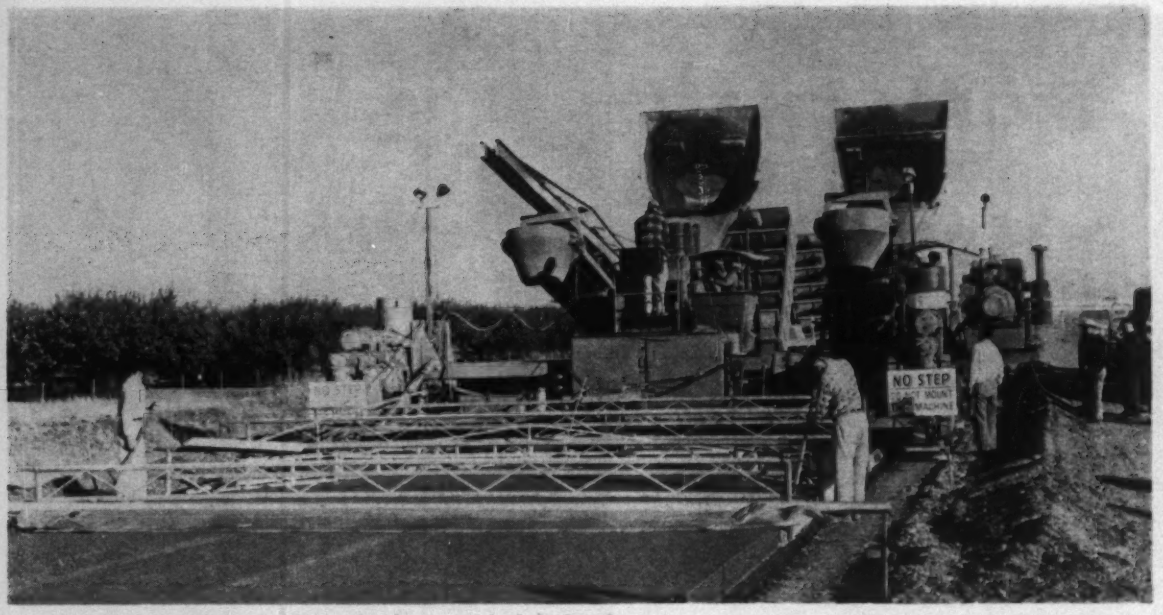
C

THE FRANK G. HOUGH CO.
772 Sunnyside Ave., Libertyville, Ill.

☐ Send data on all "PAYLOADER" models and attachments.
☐ Send data on No._____ shown in this ad.

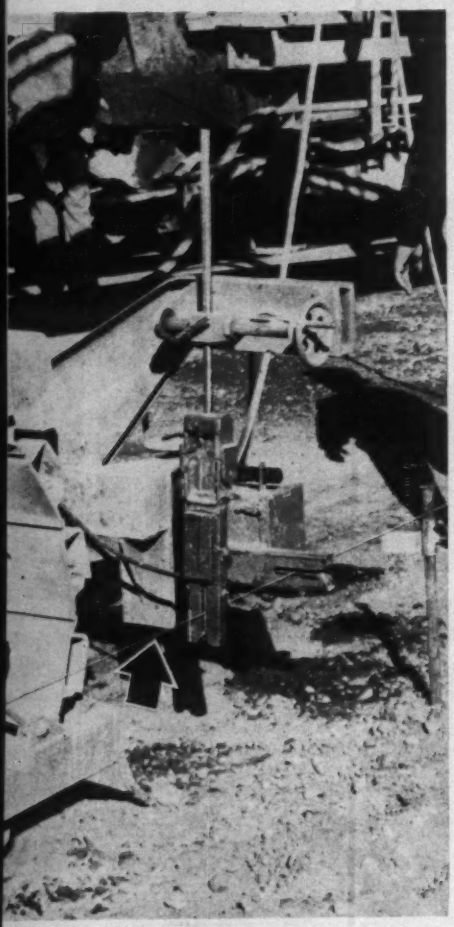
Name.....
Title.....
Company.....
Street.....
City..... State.....

1-8-3



This paver is being used on a highway job for the first time.

New Slipform Paver Makes Road



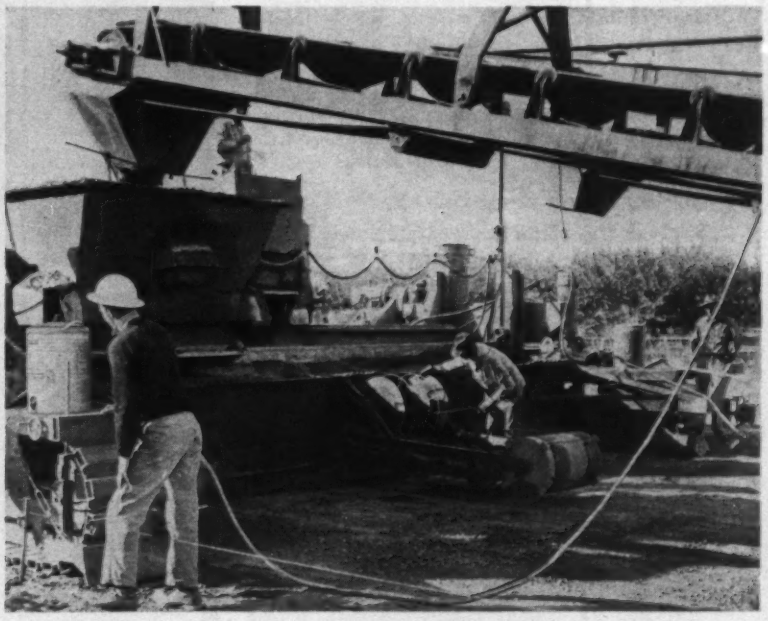
Guidance system uses wires.

A new slipform paver is placing 24-ft-wide, 8-in.-thick concrete pavement at rates up to 4,000 ft a day. And it's meeting tight smoothness specifications prescribed by the California Division of Highways.

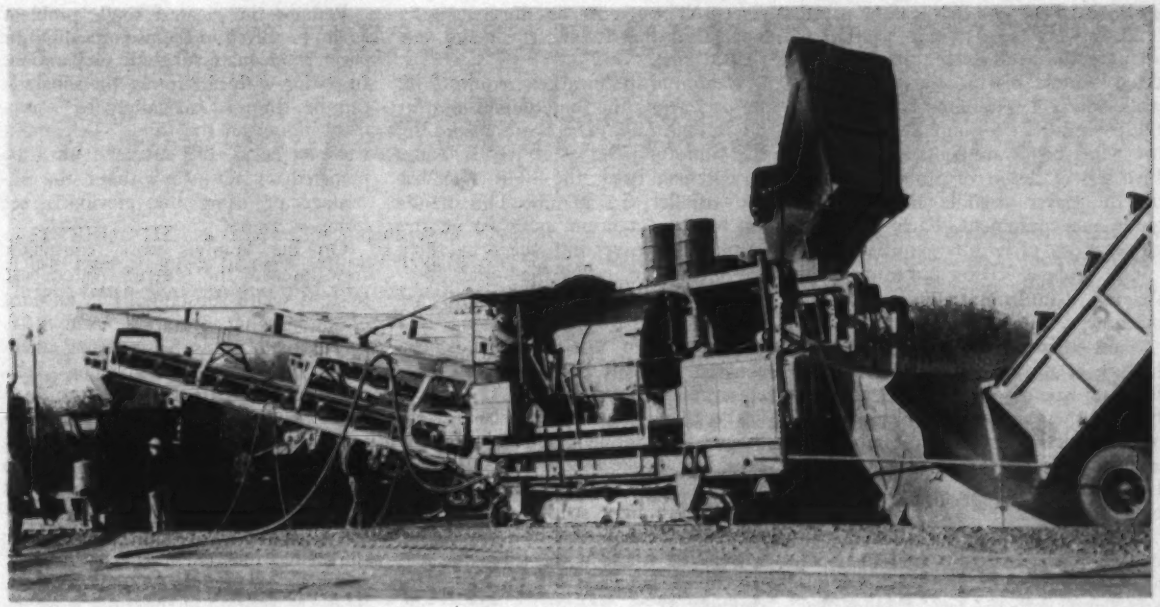
Developed by Guntert and Zimmerman of Stockton, Calif., the rig is being used by Gordon H. Ball, general contractor of Danville, Calif., on two Interstate Highway contracts totaling 19 miles near Winters, Calif., about 80 miles northeast of San Francisco.

It is the first use of a slipform paver on highway work in California. Now in use in a handful of states, slipform pavers are growing in popularity; their adherents claim substantial savings in cost over the use of more conventional equipment.

Standard specifications of the Division of Highways cover in detail meth-



Traveling hopper distributes concrete. Drum places tie bars.



Contractor feeds the machine with two dual drum mixers fitted with conveyor belts.

as Smooth as California Wants It

ods for placing 12-ft-wide lanes with equipment riding on side forms.

But new provisions permit the contractor to use different paving methods than covered by the specs. These provisions include prior approval by the state agency and a demanding smoothness specification.

The standard smoothness specification limits surface variation to ⅛ in. in 10 ft measured from a straightedge. In addition, pavement laid by new type equipment must be within a smoothness tolerance measured by a profilograph.

The instrument, recently developed by the Division of Highways, has a 25-ft wheel base. Mounted in the center is a recording wheel that is sensitive to variations in surface smoothness. As the profilograph is pushed along day-old pavement, surface variations in excess of a vertical band 0.2 in. wide, are automatically recorded on graph paper.

To set up a smoothness standard, state officials operated the profilograph on a number of completed highways of acceptable smoothness. The resulting specification limits surface variations to a profile index that for any one-tenth mile section does not exceed the rate of 7 in. per mile.

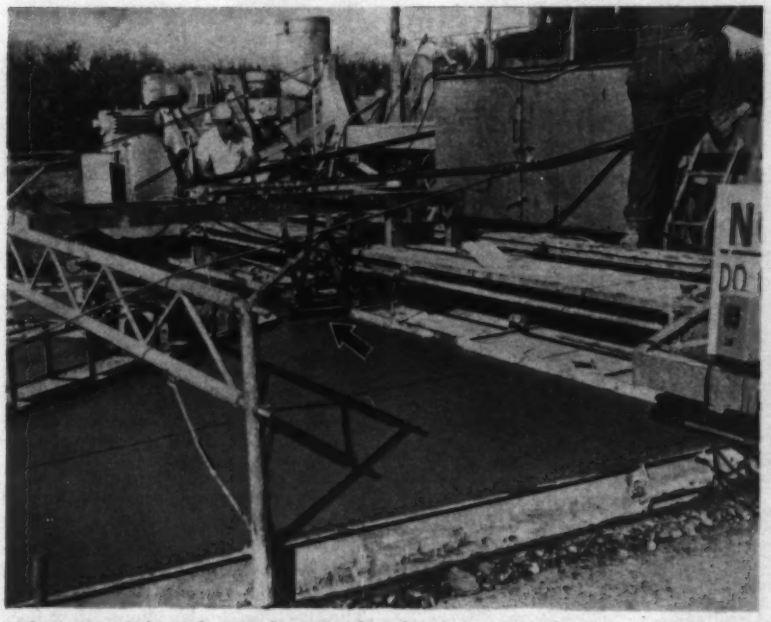
Measurements are made about 30 in. from the outer edge of the pavement. If the daily average of the profile indexes exceeds this rate for any three consecutive working days, paving operations must be discontinued until suitable equipment and methods are provided by the contractor.

It was on the basis of these new specification provisions that some highway contractors in California have been able to use 24-ft-wide paving equipment (ENR April 25, 1957, p. 49).

The Griffith Co. used the new Guntert and Zimmerman slipform paver last summer on a Corps of Engineers flood channel project in Los Angeles. State Highway engineers followed this job closely, including measurement of surface smoothness by the profilograph. Results were satisfactory.

Gordon H. Ball's work includes two contracts totaling 19 miles. The pavement is two lanes wide, except for short stretches through two interchanges where a four-lane divided highway is being built.

First step in the paving operation after completion of the subgrade is to set wires to exact line and grade on



Vibrating T-bar forms longitudinal joint groove.

each side of the area that is to be paved.

Piano wire, 16 or 18 gage, is attached securely to metal stakes, precisely located. Crews placing the wire guides work only a few hundred feet ahead of the paving train to limit the chance of the wires being accidentally displaced. Five sets of feelers or probes mounted on the paver straddle the wires to guide the equipment. Each probe includes a pair of sensitive limit switches.

One probe is vertical and controls the steering or horizontal alignment of the machine.

Two horizontal probes are attached to each of the paver's side frames, one fore and one aft of the crawler treads. Each of these probes controls operation of a double acting hydraulic ram. The rams in turn control the vertical position and level of the machine to very close tolerances.

Forward speed of the paver is controlled by the operator. And the operator governs speed of the machine in accordance with the rate at which concrete is delivered to it. The paver can work at a maximum speed in excess of 7 ft per minute.

On the Winters job concrete is mixed by a pair of 34E dual drum pavers. On each paver is mounted a 35-ft-long conveyor belt that delivers concrete to a traveling hopper riding on the slipform rig. The hopper has a pneumatic gate and travels back and forth across the front of the slipform machine to distribute concrete into a trough.

The slipform rig is powered electrically from a 100 kva diesel generator set. Each tread is run by an electric motor with speed regulated by the operator through a rheostat.

Including 30 ft of trailing forms, the machine is 45 ft long from the concrete trough to the end of the forms.

Immediately back of the concrete trough is a transverse vibrating tube.

Just behind the tube is an 80-in.-long transverse screed that provides initial compaction and surface smoothness. This is followed by a second transverse screed about 2 ft long. And next comes a vee-shaped float. At the end of the trailing forms is a burlap drag, which gives surface texture to the pavement. Edging is a manual operation performed just ahead of the burlap drag.

A second burlap drag is pulled along the pavement by hand about 100 ft behind the slipform machine. This is followed by a bridge from which a membrane curing compound is sprayed on the concrete.

Since the slipform paver has been placed in service on the Winters job, the contractor has mounted automatic equipment on it to cut grooves for both longitudinal and transverse joints. The longitudinal joint groove is cut by a vibrating bar that follows the rear screed. The groove is finished by a small float that follows the major vee-shaped float.

California specifications require ½ in. tie bars across the longitudinal joint at 30 in. intervals. These are placed by the slipform paver as it travels along. A workman twists the 30-in. steel bar into parallel wire strands. The strands are fed over a drum mounted on the front of the paver into the 8 in. thick pavement 4 in. below the surface.

Transverse weakened plane joints are formed as the paver moves along by a vibrating T-bar inserted in the fresh concrete and left in place as the machine moves forward about 12 in. The floats then obliterate the transverse groove thus formed. On curing however, hair cracks appear across the slab at locations where the grooves were vibrated. Automatic spacing of the transverse joints is governed by a sequencing wheel that rides on the subgrade.

Careful batching is important for concrete to be used in a slipform machine. Close control of water content is perhaps the most important single item in the batching process. On the Winters paving work, aggregate delivered to the batch plant is uniformly saturated. And water introduced at the mixers is carefully measured.

Purpose of careful batching is to produce uniformity and control slump. Slump is on the order of 2 in. The slipform paver uses simple vibration and screeding processes, and the contractor utilizes methods that involve a minimum of concrete handling. Result is a pavement of excellent quality with no edge sloughing, even though concrete is in the forms less than six minutes.

Perhaps the greatest single problem left to be solved in the use of a slipform paver is adequate subgrade preparation. In paving with side forms, the subgrade can be trimmed accurately by equipment riding on the forms. In using a slipform paver, the subgrade must be prepared in advance without the advantage of using the previously set forms as guides.

On the Winters work, contractor crews prepare the cement treated base to 26-ft width substantially in advance of the paving operation. And it is sprayed with an asphaltic curing membrane. This results in a smooth, relatively hard surface that both the dual-drum pavers and batch trucks can run over. But for economy of paving operations, the surface must be accurate to the specified tolerance of 0.02 ft. And this is difficult to accomplish with existing grading equipment. Thus, before the savings inherent in the slipform are to be realized completely, more accurate subgrade preparation methods must be developed.

For the 13.7 miles at the north end of the project, Gordon H. Ball holds a $1.4-million contract for paving. Harold J. Lopez is resident engineer for the state highway department for this project. Ball previously held a $3.5 million contract for grading and structures on this section.

For the 5.3 miles at the southerly end of the project, Ball holds a $1-million contract for grading and paving. George Demetras is resident engineer for the state. General superintendent for Ball on all the work is Merrill Dubach. Paving superintendent is Bill Appel.

And, In North Carolina . . .

. . . Another type of slipform paver gets a workout.

C. E. Ballenger Paving Co. of Greenville, S. C., is using the Rex slipform-paver on a 5.6-mile bypass of U. S. 1 around Moncure. It is the first use of a slipform paver on highways in North Carolina.

Dick Woodlief, Ballenger construction superintendent, says: "It's allowed us to cut our paving crew from 99 men to about 55." The Ballenger firm estimates the method has reduced cost of paving about 45 cents per square yard. The machine can lay about 2,000 ft of 8-in.-thick, 24-ft. pavement per day.

WHEN CITIES PLAN URBAN RENEWAL

it pays to specify Vitrified Clay Pipe

PITTSBURGH has used miles and miles of Vitrified Clay Pipe in preparing its sanitary system for the bright future that lies ahead of any city willing to stir itself and invest in America's growth and progress. New research-developed, compression joints for Clay Pipe reached the market just in time for many of these far-seeing projects.

Like Pittsburgh, growing communities everywhere need the permanence and safety that only Clay Pipe can provide. Clay Pipe is the only pipe that never wears out . . . does not rust, rot, corrode, or crumble. And with its new research-developed, factory-made compression joints, Clay Pipe is faster and easier to install than ever before.

When your community plans new sewerage facilities, be sure to consider the exceptional advantages of Clay Pipe. Its exclusive long-term guarantee is your assurance of permanent, maintenance-free service. Only Clay Pipe has *all* the features you can trust to handle industrial growth and other expansions that go hand in hand with modern cities on the march.

NEW COMPRESSION JOINTS MAKE CLAY PIPE BETTER THAN EVER

C-1059-145

Vitrified **CLAY PIPE** *Never Wears Out*

NATIONAL CLAY PIPE MANUFACTURERS, INC. 1820 N Street, N. W., Washington 6, D. C.
311 High Long Bldg., 5 E. Long St., Columbus 15, Ohio • 445 Ninth St., San Francisco 3, California • Box 172, Barrington, Illinois • 1401 Peachtree St., N.E., Atlanta 9, Georgia

UNION

The *UNIQUE Wire Rope Organization

**Single in Kind or Excellence*

Customers can be credited for Union's outstanding position.

Why? Simply because in large numbers they accepted Union's standing invitation to share their wire rope and sling problems with Union's technical, research and engineering staff.

In meeting these challenges, Union has compiled an outstanding record in wire rope advancements. Some 1600 standard wire rope constructions are in day-to-day production under statistical quality controls which insure "the ultimate low cost rope." This means quality so good that it costs less in the long run.

In searching for better answers to wire rope and sling problems for customers, Union engineers developed the famous family of Tuffy wire ropes and slings.

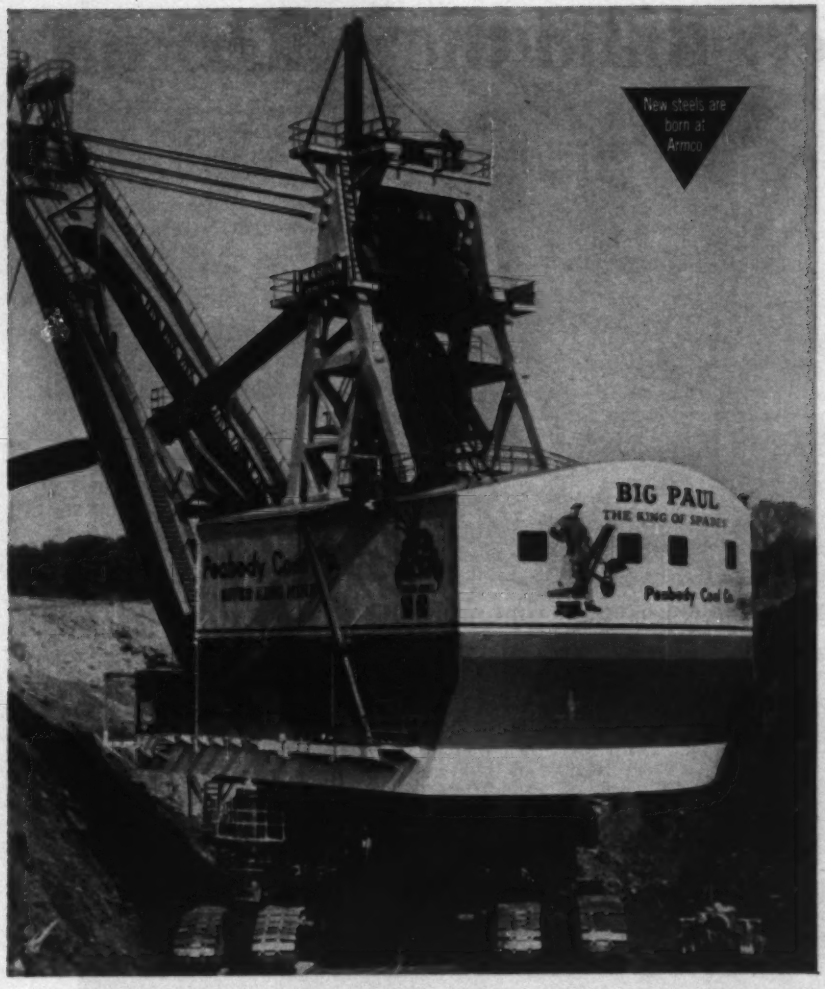
Each member of the Tuffy family is of a special construction tailored to one of the tougher wire rope jobs. In the Tuffy constructions there is balance—the right combination of strength, flexibility and resistance to wear for better performance and greater safety. When you say Tuffy, you specify the "Ultimate low cost" wire rope or sling.

Tuffy® Wire Ropes and Slings

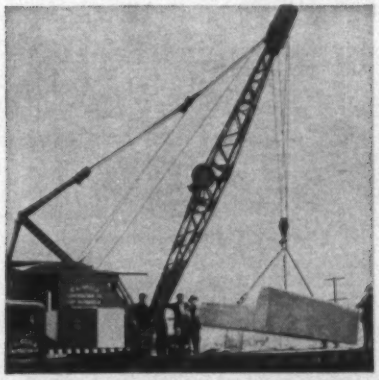
Tuffy Balanced Dragline Rope

Tuffy Balanced Scraper Rope

Tuffy Balanced Dozer Rope



Big Paul, The King of Spades, world's largest electric power shovel. In taking a 105 ton bite (2 rail carloads) it imposes a maximum bail pull upon the wire ropes of 550,000 lbs. One-half mile of wire rope is required in its operation by the Peabody Coal Company at its modern River King Mine, Freeburg, Ill.



Look Up Your Union Distributor In Phone Book Yellow Pages

He's selected for his ability and willingness to supply you with the right Union standard or Tuffy wire rope construction, to check for proper installation and coach your operators in proper use to get the ultimate in service life. He is backed up by a nearby Union branch office and warehouse. If you would like to receive Union's Rope Dope Educational Bulletin, write Union Wire Rope Corporation, 2228 Manchester Ave., Kansas City 26, Mo.

Tuffy Wire Rope Tips on Safe Use of Wire Rope and Slings

On the Blink from a Kink

Mishandling of rope caused this open kink. Avoid kinks by proper winding on the drum. Never pull a loop smaller. Enlarge it, then straighten out the rope.

Overloaded - Soon Exploded

The rated capacity of a wire rope is based on breaking strength divided by the load factor for particular type of service. Grade of steel, type of construction and size of rope determine tensile strength. Unless rope is properly related to loads, costly and dangerous early failures are likely to occur.

Mangled in a Wedge Socket

Here's a result of improper socketing, caused by poorly designed or worn-out wedge socket. Can be costly and hazardous!

Victim of the "Bends"

Excessive bending of rope speeds up wear. General rule: use more flexible ropes as bending stresses increase (with decrease in tread diameter of sheave or drum). If sheaves are too small, early rope failure is certain.

Would you like a copy of a booklet in which more than a score of Tuffy Tips like those above are reproduced. If so, write Union Wire Rope Corporation, 2228 Manchester Ave., Kansas City 26, Missouri.

Tuffy Balanced Slings and Hoistlines

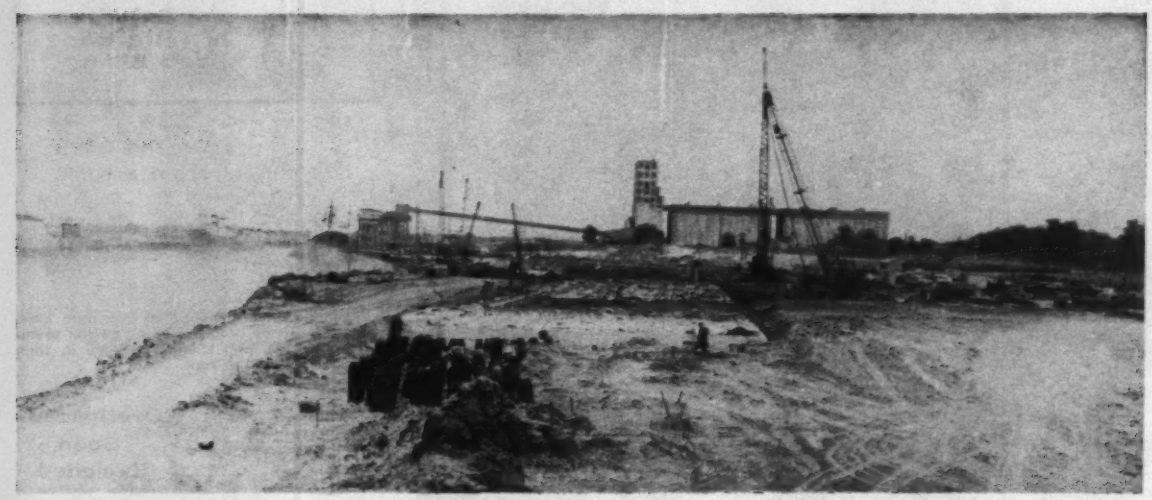
1-C

UNION Wire Rope

Subsidiary of ARMCO STEEL CORPORATION

OTHER SUBSIDIARIES AND DIVISIONS: Armco Division • Sheffield Division • The National Supply Company
Armco Drainage & Metal Products, Inc. • The Armco International Corporation • Southwest Steel Products

Cost Cutter: Build the Wharf on



The slab for Wharf 20 was cast on the ground over pile caps, well inland.

Bolts were cast in slab to hold rails; piles will support additional rails.

After the wharf was built, the Houston Ship Channel was dredged back to meet it.

Land, Move the Water to It

The Port of Houston saved almost 10% of construction costs of a deep water wharf by building it 100 ft inland from the Houston Ship Channel it was designed to serve.

A continuous concrete slab, 2 ft thick and 600x62 ft, was built directly on the ground over concrete pile cap supports. When the wharf was finished, the channel was dredged back to it.

The project, Wharf 20 in Texas' Houston Ship Channel, cost about $1.2 million. Two nearby wharves, 18 and 19, were built at the same time in the conventional manner and each cost about $100,000 more.

The savings on the wharf are attributed to a reduction in the amount of heavy form work needed and the need to dig less dirt from beneath the structure.

The site for the wharf was particularly well suited for construction on the ground. It was a comparatively high and dry area, accessible from all sides for excavation and drilling operations.

Francis J. Niven and J. G. McKenzie, Houston consulting engineers, designed the wharf to support 160,000 lb of concentrated loads and 500 psf of railroad loads simultaneously.

Here's how the job was done:

The contractor, R. P. Farnsworth & Co., Inc., New Orleans, drilled a series of shafts in the ground, filled them with concrete, capped the concrete shafts and placed the slab on them.

Farnsworth drove steel sheetpiling along the front edge of the wharf to form a bulkhead before construction of the slab began. The sheetpiling cuts off a layer of muck that exists a few feet below the bottom of the channel and keeps it from seeping under the wharf. The bulkhead was capped 2 ft above low mean water level.

The 26-in.-dia shafts were drilled down 70 ft to reach a clay stratum with a bearing value of 8,000 psf. The depth of this layer of clay made it necessary to drill shafts and fill them with concrete instead of drive piles.

The shafts were reamed out to 6-ft-dia footings. The footings for each bent were on 10-ft centers. The bents were installed at right angles to the front of the wharf and placed at 20-ft intervals.

The front row of concrete shafts were formed with metal casings for the sake of appearance. The others were cast in drilled dirt.

Trucks on both sides of the wharf area placed concrete at the rate of 100 cu yd per hour for the slab, casting it on the ground over the pile cap beams and reinforcing bars.

Deadmen support the steel sheetpile bulkhead.

Concrete support shafts cast in dirt have rough finish.

The sheetpile bulkhead was anchored behind the wharf to a series of 50-ft concrete shafts under-reamed with 6-ft-dia footings. The shafts were drilled at 30 deg angles to the vertical and meet to form "A"-shaped deadman anchors. They are attached to the bulkhead by 3¼-in. tie rods.

After the wharf was built, the contractor excavated the earth from beneath it on a 1:3 slope 62 ft back from the top of the bulkhead. This surface was covered with gravel and paved with a 6-in. concrete slab before ship channel water was admitted under the wharf.

The designers of Wharf 20 allowed for a deflection of about 0.1 in. in 40 ft on the assumption that the slab was not bearing on the support between a 40-ft span. The safety allowance was made in case laboratory analysis of the foundation soil had not covered all the clay layer 70 ft down.

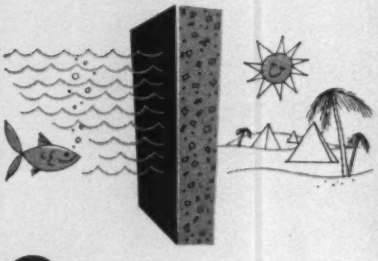
The total load on each of the 70-ft concrete supporting shafts under the wharf is approximately 240,000 lb.

2 basic waterproofing needs

1 *reliable product*

Men who write waterproofing specifications insist upon *proved* products which they know will uphold their reputations. When they specify IRONITE® WATERPROOFING, a metallic water resistant compound, they know that:

- IRONITE WATERPROOFING is not merely an outer coating
- Its fine particles are carried in suspension in water and thus actually work their way into any and all voids or cavities in the concrete, brick or other porous surfaces
- These particles then oxidize and expand to become a part of the mass to which the IRONITE WATERPROOFING is applied
- Cannot scale, blister, crack or peel
- IRONITE WATERPROOFING cannot be removed without the destruction of the underlying surface
- It has proved its ability to stand up indefinitely in some of the world's most famous buildings



2 *reliable application*

Experienced specifiers know that SKILLED APPLICATION is just as important as product competence!

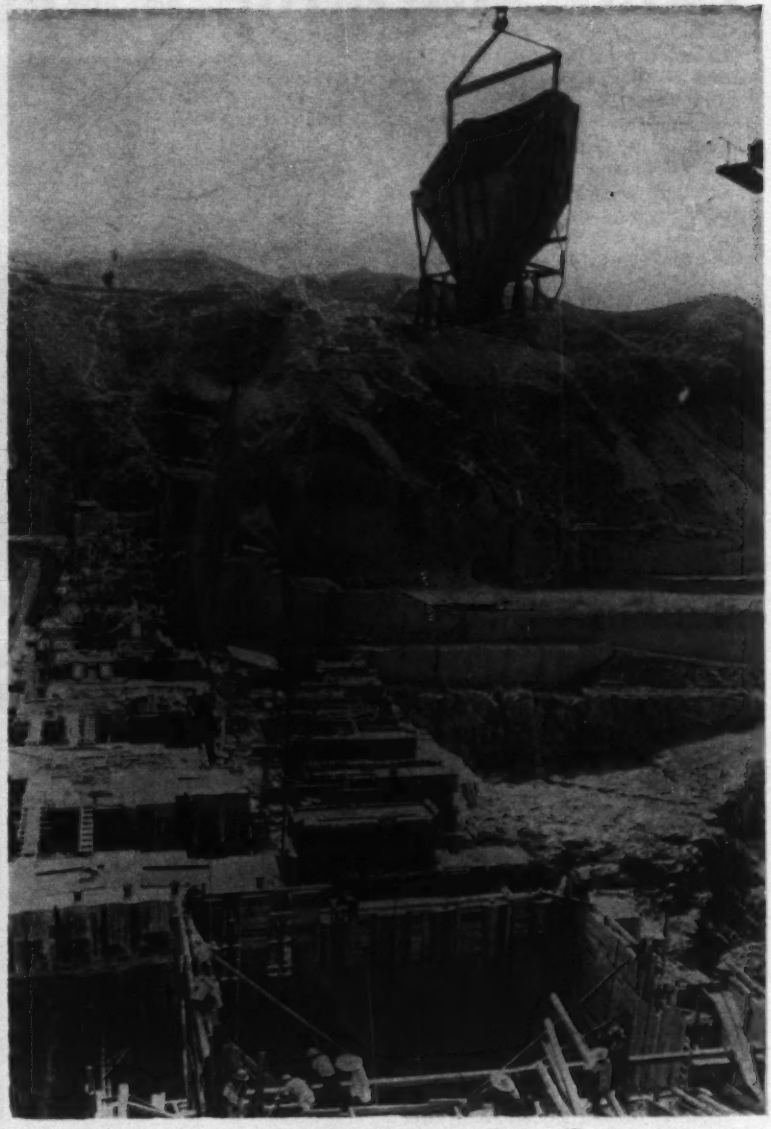
IRONITE WATERPROOFING has been outstandingly successful in all types of industrial, commercial and institutional buildings for more than 50 years because it is applied *by licensed contractors & engineers* who are specialists in the solution of all types of waterproofing problems.

Send for details and information regarding the location of your nearest IRONITE *licensee. Write IRONITE COMPANY, Suite 729—208 South LaSalle St., Chicago 4, Ill.*

IRONITE COMPANY

® Registered Trademark

International



Among biggest river projects is Sanmen Gorge Dam.

Red Chinese Fight

Reports from China indicate the Reds are making a huge effort to cut future flood and drought losses. About 35 million people, mostly from communes, are said to be working on water storage, drainage and irrigation projects.

China's agriculture is peculiarly dependent on controlled water. The basic food crop, paddy rice, requires so much water that irrigation is mandatory throughout the country. Great numbers of farmers work arid and semi-arid regions. Huge areas of the country are devastated by flood every year. And even areas of normal rainfall suffer severe droughts.

During the first year of the five-year plan beginning in the fall of 1957, new land brought under irrigation totaled more than twice the 10-million-acre increase of the preceding five years, according to government claims.

Masonry dike in Canton keeps West River under control.

Irrigation canals supply 12 million acres in Anhwei.

Flood and Drought

The Red regime is placing main emphasis on small upstream works that can be handled by communes rather than the central government.

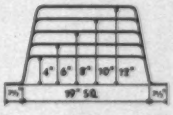
However, Peiping is also pushing big multipurpose projects. Concreting is well along, for example, on the Sanmen Gorge Dam. Begun in 1957 (ENR June 27, 1957, p. 92), this 500-ft-high, 2,600-ft-long dam is being built on the middle reaches of the Yellow River. It is said to be the biggest in a 46-dam program for the Yellow River.

The Sanmen Gorge project is sparking a sizable effort upstream. Peiping reports that 10 million people are rushing completion of conservation works in the middle and upper reaches of the Yellow River to shut off the great flow of silt. The 1.4 million tons reported to pass through the gorge every year would soon choke up Sanmen Reservoir.

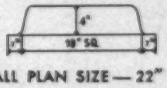
In modern horizontal buildings, too

GRID SYSTEM CONSTRUCTION OFFERS EXTRA ADVANTAGES!

With economical, adaptable GRID SYSTEM construction, many things are possible! GRID SYSTEM two-way ribbed concrete slabs carry maximum loads — allow for the addition of extra floors, penthouse additions, roof parking or storage, etc. Interchangeable steel GRID domes offer wide, open spans and great flexibility in utility layout. GRID SYSTEM ribbed ceilings create an interesting decorative effect, provide good acoustical properties. Air diffusers, lights, acoustic tile or utilities install easily in the recessed areas. Now in use in thousands of buildings from coast to coast*, versatile GRID SYSTEM cuts building time and costs to a minimum.



OVERALL PLAN SIZE — 24" x 24"



OVERALL PLAN SIZE — 22" x 22"

Interchangeable GRID domes are delivered to the job site in quantities large enough for any project. No charge is made for normal wear and tear, including necessary screw holes for sleeves, inserts, etc. All GRID domes have the same slope, for uniform appearance.

*Among the many buildings utilizing GRID SYSTEM construction are: Lexington Junior High School, Lexington, Mass.; Administration Building, Library Building and Classroom Building, Furman University, Greenville, S.C.; Pan American Airways Hangar #14, Idlewild Airport, N.Y.; Off-Street Parking Garage, Post Office Sq., Boston, Mass.; Prudential North Central Home Office Building, Minneapolis, Minn.

GRID SYSTEM T.M.

GRID FLAT SLAB CORPORATION
Boston 25, Massachusetts

GRID SYSTEM
Grid Flat Slab Corporation
761 Dudley Street
Boston 25, Mass. EN-1A

Gentlemen:

☐ Please send me your catalog, with full information on GRID SYSTEM construction.

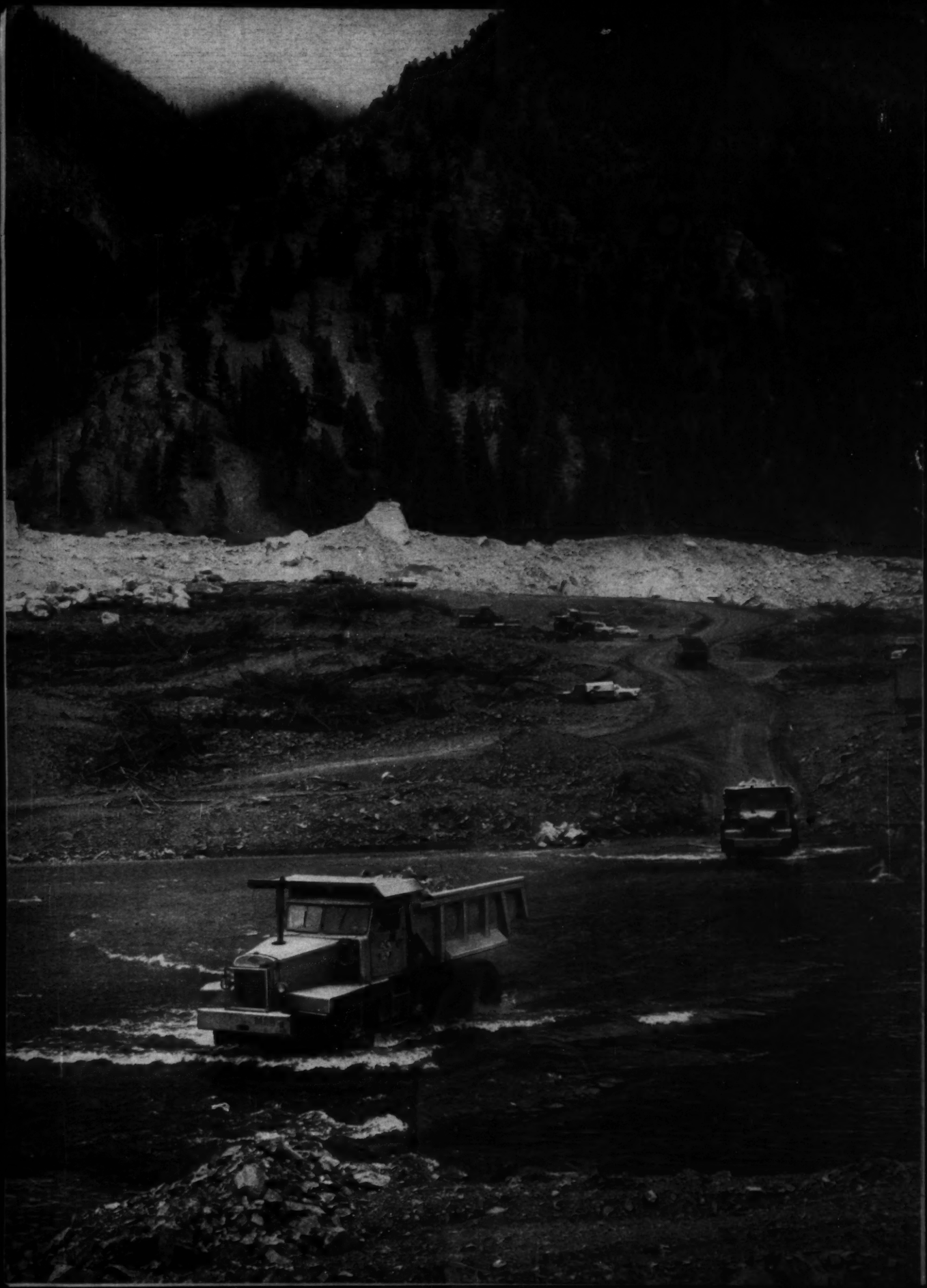
☐ Please add me to your mailing list to receive GRID-GRAM NEWS.

Name_____

Company_____

Address_____

City_____ State_____



Thousands upon thousands of tons of rock were dumped along the base of the earthquake-made dam to form a "stilling basin." Here a Mack LVX dumper adds its load of rock to the river bed.

Crossing and recrossing parts of the trapped Madison River with loads of rock fill—all in a day's work for F & S Contracting Co. and the twenty-odd Mack dumpers assigned to the job.

From the base of one of the huge rock slides these Macks worked back and forth to the river bed on a round-the-clock schedule. F & S Contracting Company of Butte, Montana, owns and operates the big trucks.

Tremendous trucking job is aftermath of

The day the mountain fell

When a devastating earthquake shook a Montana mountainside into the Madison River, it created an earth-moving problem of staggering proportions. The river, trapped behind the huge rockslide, had to be quickly released to prevent disastrous floods. Heavy equipment from surrounding areas was mobilized. In a matter of hours emergency roads had been cut through to the remote quake site, and a crash clearance program was under way.

Among the first to get equipment through to the disaster area were crews from F & S Contracting Co., Butte, Montana, with a fleet of heavy-duty Mack dumpers. Day and night on a 24-hour-a-day basis, F & S, veteran of many tough jobs, hustled its Macks through axle-deep mud and water, up almost insurmountable grades and over jagged rock surfaces. Thousands of tons of rock were moved, and F & S reports the Mack trucks detailed to this back-breaking job took it all in stride.

Really tough assignments like this offer indisputable proof of the matchless stamina and dependability built into every Mack vehicle. Unusual or routine, Macks can always be depended on to handle the job efficiently and economically. There's a Mack branch or distributor in your area who will be glad to help you select the model designed to handle *your* important hauling jobs. Mack Trucks, Inc., Plainfield, New Jersey. In Canada: Mack Trucks of Canada, Ltd., Toronto, Ont.

7331

MACK
FIRST NAME FOR
TRUCKS

Beth-Cu-Loy culvert under 43 ft of fill

Poking its nose out from under a 43-ft fill of earth and rock is a 292-ft-long culvert of 8-gage Beth-Cu-Loy corrugated galvanized steel. This 42-in.-diameter culvert rests easy beneath its tremendous burden because Beth-Cu-Loy pipe is flexible, thus tends to distribute the stresses peripherally.

Flexibility also permits corrugated galvanized steel pipe to take the impact and vibration of heavy vehicular traffic. It takes care of changes caused by freezing and shifting soil, and makes grading and alignment easy. Installation is simple and speedy, without need for heavy special equipment.

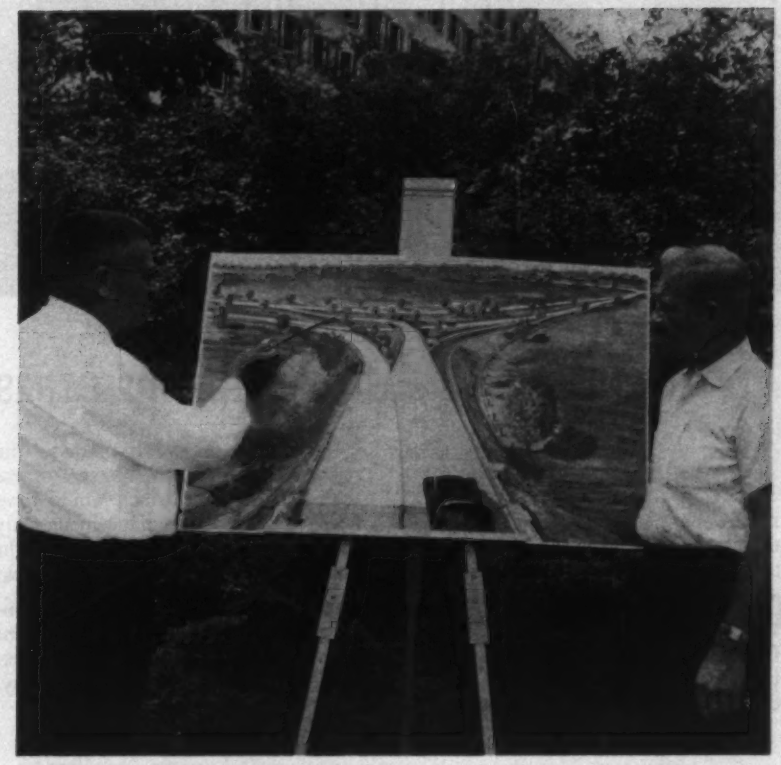
Beth-Cu-Loy culvert sheets conform to the rigid specs of the AASHO. Rolled from open-hearth steel, these sheets contain copper for added corrosion-resistance. Additional protection comes from a tight, 2-oz coating of Prime Western zinc.

We'll be glad to send you full details about Beth-Cu-Loy culvert sheets, as well as the names of fabricators who form them into pipe. Just call or drop a line to the nearest Bethlehem district office.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM STEEL



Highway department lets . . .

Paintings Speak for Projects

Wisconsin businessmen, farmers and housewives who want to know how proposed highway projects will change their neighborhoods no longer have to pore over blueprints, which they can't understand.

The Wisconsin State Highway Commission now uses large oil paintings to show them what a bridge will look like when it's finished, what buildings and trees will be left standing when a traffic interchange is built, how an expressway will look as it runs through a cornfield.

A blueprint can be as easy to read as a check for engineers, but to most laymen it's as meaningless as cuneiform inscriptions.

The commission was long aware that engineering drawings exhibited at public hearings and talks before civic groups weren't much help in winning public understanding and acceptance for highway improvement plans.

Commission officials tried three-dimensional scale models of projects for several years. These were effective, but difficult to carry about and expensive to build.

Leroy W. Empey, district engineer at Green Bay, and staff artist Reynhold Schenkelberg decided early this year that an oil painting of a project would be a vivid and inexpensive means of showing the people of Wisconsin what the commission wanted to build.

The pictures Mr. Schenkelberg produced were so successful that the commission adopted the idea.

"We notice a lot more understanding among the people in the areas to be affected by the improvement after we've shown them the paintings," says Mr. Empey. "They see exactly how things are going to be after the project is completed and they are genuinely satisfied. The older methods we used left them with many questions. Now we seldom have any queries after they've seen the paintings."

"Nothing is left out," says Mr. Schenkelberg. "I make it a point to show the trees and buildings that will be saved. I even put light poles and road signs in their exact locations. It allays the fears people have that the engineers are going to tear down everything."

2 ways you save money with a dependable

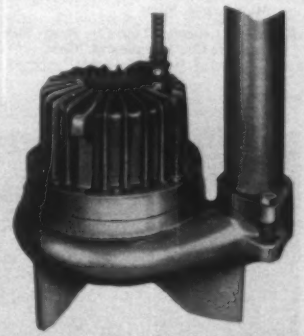
WEINMAN

immersible non-clog pump

The Weinman Type M pump easily handles liquids with large suspended solids while completely immersed. Yet, this compact, efficient pump saves you money two ways. You save on original cost . . . and you save again on installation cost. No pit cover or other special installation equipment is needed. Just lower the pump into the pit, connect the discharge line and waterproof lead cable. That's all. The pump is ready to handle sewage, drainage water and industrial waste.

Here's a bonus saving. Maintenance or the few repairs ever necesary can be made quickly and simply. All you do is disconnect the discharge pipe and lift the pump out of the pit.

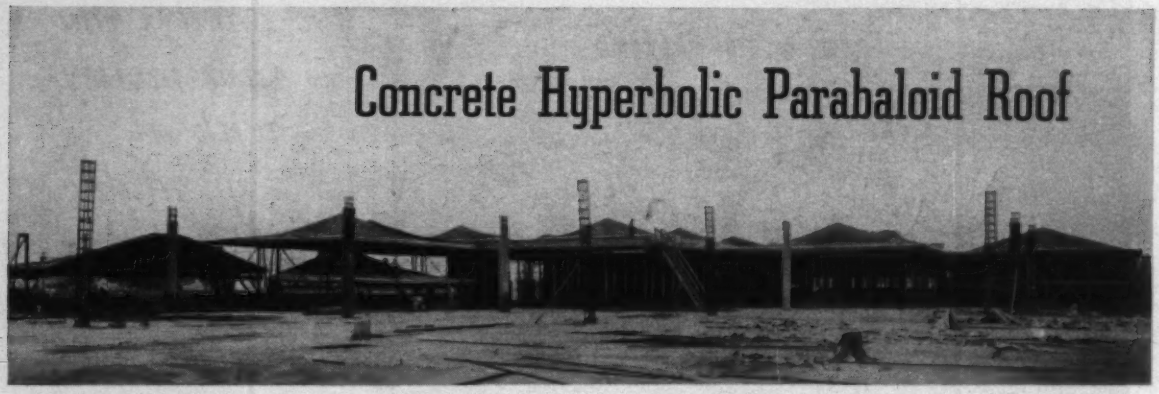
It will pay you to get full information about the Weinman Type M pump. Write us for free bulletin No.1700. Or, call your Weinman Pump Specialist. He's listed in the Yellow Pages.



THE WEINMAN PUMP MFG. CO.

290 SPRUCE STREET • COLUMBUS 8, OHIO

Centrifugal Specialists



Concrete Hyperbolic Parabaloid Roof

Partially completed fireproof shopping center. Each of the 44 umbrella units is 48′6″ x 46′3″ and is supported by a single column. The completed building is 196′ x 511′.

Provides Large Unobstructed Floor Areas

At Bloomington, Minnesota, this new shopping center has been completed employing a very modern concrete hyperbolic parabaloid roof design—the first of its kind in the Minneapolis area. This type of roof design for single story structures provides large unobstructed floor areas at low cost.

Contractor planning on the job was precise. Careful scheduling and the use of Lehigh Early Strength Cement made it possible to strip and re-use the unique concrete form system in less than half the time which would have been required with regular cement. Only four sets of forms were needed. Eight units—or bays—were poured per week.

This is another example of the advantages of Lehigh Early Strength Cement and modern concrete construction. Lehigh Portland Cement Company, Allentown, Pa.

LEHIGH CEMENTS

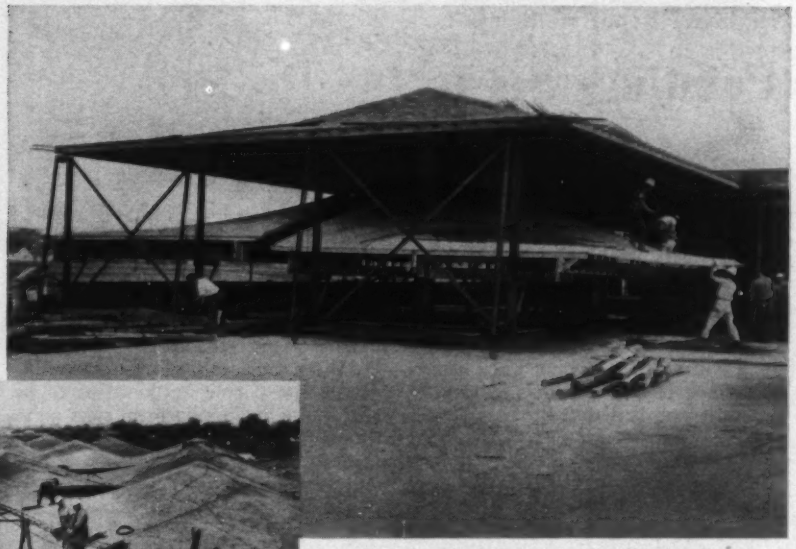
Owner: Bloomington Development Co., Bloomington, Minn.

Architects: Manuel Morris & Robert E. Sixta Assoc., Kansas City, Mo.

Structural Engr.: Dutton Biggs, Kansas City, Mo.

Contractor: George Madsen Construction Co., Minneapolis, Minn.

Ready Mix Concrete: Twin City Ready Mix Concrete Co., Minneapolis, Minn.



As set of forms is lowered, workmen place supplies of reinforcing on it. Form serves as elevator to carry bars to roof for assembly. Each half of the form weighs 4 tons. Four sets of forms were used cyclically for an efficient construction schedule.

Other workmen prepare reinforcing for more roof sections on top of completed concrete "dunes." Concrete shell is 3″ thick.

High-strength bolting or . . .

. . . Riveting

Which Way Is Better in the Shop?

Use of high-strength bolting can add 66% to a fabricating plant's production capacity with no increase in labor force or plant size. Slight savings in labor, material, and overhead costs also result from the substitution of bolting for riveting.

Those are the conclusions of a test study conducted by a fabricator, a bolt manufacturer and a consulting engineer firm.

A 500-ton building frame, originally designed for shop-riveting, was selected for the study. It contained three classes of structural members: trusses, beams, and braces.

Twelve half-trusses, 40-ft in length, were shop-bolted; twelve were shop-riveted. A set of 54 beams and 48 bracing members was bolted, and an equal set riveted. Rivets and bolts were ¾ in. diameter and equal in number. Cutting, punching, and other pre-assembly fabrication was identical for both bolted and riveted members.

Shop-bolting eliminates two major handling operations: removing the member from the fit-up skids and storing it, and later removing it from storage and placing it on the rivet skids. Comparison of the truss-riveting operation with the truss-bolting operation illustrates this same difference for beams and braces also.

Shop-riveting the truss required these steps:

- Placing chord angles on skids and installing fit-up bolts, ring fills and gusset plates.
- Assembling web members and aligning truss with drift pins.
- Tightening fit-up bolts and tack-welding members to hold position during transport.
- Removing truss from bolting-skids (and usually putting it into storage).
- placing truss on skids, removing drift pins and bolts, and reaming holes.
- Driving rivets.

Shop-bolting follows the same steps as riveting through alignment with drift pins. But it concludes with only these steps:

- Placing high-strength bolts and tightening with automatic torque-controlled wrenches.
- Checking camber.

The bolted truss is then at the same stage as the riveted truss after riveting, ready for removal to the shipping yard.

Bolting also eliminates removal of fit-up bolts, collection of fit-up bolts and drift pins after riveting and a considerable amount of reaming.

"Over-all cost—labor, overhead, and material—was 2% less for high-strength bolting than for riveting." Analysis of the test results showed a 175% increase in bolting material costs. But this is more than offset by a 40% saving in labor costs.

Latest, most efficient methods were used in all test work. Riveting crews used hydraulic rather than pneumatic bull riveters as the most economical method. Performance standards were above normal. All rework for both processes was excluded from the results.

Probable future developments could make shop-bolting even more economical. Use of high-strength bolts with larger heads, a possibility this year, would eliminate the need for one washer. This would raise cost savings in high-strength bolting to 10%.

Use of the turn-of-the-nut method of tightening large-headed bolts might eliminate both washers and raise cost savings to 17%.

Higher allowable stresses for high-strength bolts will probably result from studies by the Research Council on Riveted and Bolted Structural Joints. This would add further economies to shop-bolting.

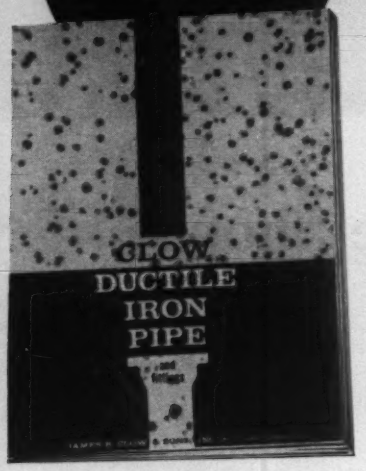
Other advantages of shop-bolting are:

- Accelerated assembly procedures.
- Added flexibility in labor and plant use.
- Reduction in plant equipment requirements.

Authors of the study report are Frederick E. Graves, Assistant Technical Director of Russell Burdsall & Ward, and Robert C. Kidd, Company Industrial Engineer of Mississippi Valley Structural Steel. They point out that cost savings will probably vary in different plants owing to variations in shop practice.

Cooperating firms sponsoring the study were Mississippi Valley Structural Steel Co., Melrose Park, Ill.; Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.; and Albert Ramond and Associates, New York City consulting engineers.

This new book will help solve your CORROSION PROBLEM



with

CLOW DUCTILE IRON PIPE

• This new construction material combines the strength of steel with the corrosion resistance of cast iron.

•

For a new and better solution to a difficult piping problem, write today to:

JAMES B. CLOW & SONS, INC.

Send Coupon Today!

James B. Clow & Sons, Inc.
201-299 North Talman Ave.
Chicago 80, Illinois

Please send your new booklet on Clow Ductile Iron Pipe.

NAME_____

COMPANY_____

TITLE_____

ADDRESS_____

Jetted Slurry Sows Grass Seed

A slurry mixture of wood pulp, grass seed and fertilizer sprayed on back slopes by a high-speed blower has been used to stabilize soil by establishing a permanent sod.

The mixture adheres to the ground and dries quickly to form a papier-mache-like blanket that encourages seed germination and protects the slopes from erosion.

Equipment employed by the process include a 1,500-gal slurry tank, a pumping unit and a blower.

The pumping unit can deliver 150 gpm of slurry to the sprayer, which has an effective range of about 125 ft.

Once the slurry tank is properly charged, only a sprayer operator and a truck driver are needed to operate the equipment. Communication between the two is by battery-powered telephone. The average crew can sprayplant 6.3 acres of surface in an eight-hour day.

The process was developed jointly by International Paper Co., of Mobile, Ala., and Food Machinery & Chemical Corp., Lansing, Mich.

'Cookies' on Grid Stop Skids

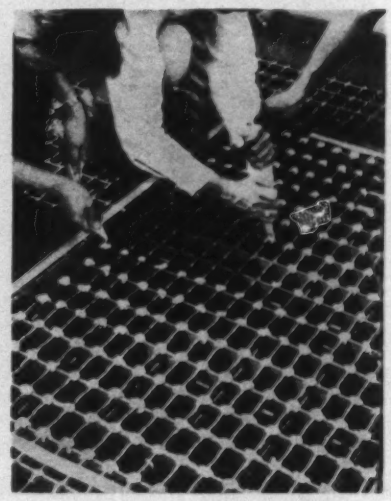
Cookie-like blobs of plastic and grit have cut skidding accidents from 35 a year to zero on the steel grid of a bridge in California.

The cookies are a mixture of a plastic adhesive and emery. The mixture is applied to the cross points of the grid, which can become as slick as ice in wet weather. The plastic bonds to the steel with about the strength of a weld, and the emery provides extra traction for cars. The weight of the plastic is not a critical load factor.

The application in California was made by the Alameda County highway department to the twin spans of the Park and Hyde Street bridge, between Oakland and Alameda.

As many as 35 motorists a year had skidded into accidents on the bridge before the steel gird was treated with the cookies. No skidding accidents have occurred since the application was made late in 1957.

The cookies are under test on two other bridges, one in Sacramento, Calif., the other, in Washington, D. C. The plastic adhesive is Epon Resin, developed by Shell Chemical Corp.



Upstream diversion tunnel and spillway. East abutment at the Hills Creek Reservoir. Green Construction Co., Des Moines, Iowa, and Tecon Corporation, Dallas, Texas, are the contractors.

How Du Pont explosives are helping to harness the waters of the mighty Willamette

Spendthrift nature dumps her waters in uncontrolled flows along the Middle Fork Willamette River in western Oregon.

To restrain this bounty and keep it from swelling into dangerous volumes, the U.S. Army Corps of Engineers is providing thousands of acre-feet of storage for water power and flood control at Hills Creek Reservoir. The water stored during the flood season is later released under control, for navigation, irrigation and fish life, with the generation of electrical power a continuous function of the installation.

This huge, multi-purpose project requires roadway relocation, a diversion tunnel, power and control tunnels and dam abutments—a lot of excavation that is aided by Du Pont explosives and Du Pont service.

Helping contractors keep on schedule and within budgets is a benefit Du Pont is well equipped to give. A call to your Du Pont representative will place the country's oldest line of explosives and greatest blasting experience at your service. Your Du Pont man can advise you on just the right products for your special job. Call him direct or write to Du Pont, Explosives Department, 6440 Nemours Building, Wilmington 98, Delaware.

DU PONT EXPLOSIVES

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

NOW...
CUT PLYWOOD FORM COSTS
WITH THOMPSON'S WATER SEAL

Note these cost-saving features:

- **Prevents absorption of water in concrete forms. Forms last longer.**
- **Saves labor. Eliminates cost of cleaning, sanding and recoating after each pour.**
- **Thompson's Water Seal permits eight or more pours per plywood form (min. 4 pours per side).**
- **Eliminates form damage during stripping. Forms can't stick. Won't soften wood, prevents deflection.**
- **Easy to apply by brushing, dipping or spraying.**

Thompson's Water Seal is deep penetrating, colorless, leaves no residue, won't stain concrete; surface is dust-free, ready for painting.

Available in 5 and 55 gallon drums from suppliers to the construction industry.

See catalog in Sweets Architectural file and Light Construction file.

Thompson's

MANUFACTURERS OF FINE PROTECTIVE CHEMICALS SINCE 1929

E. A. Thompson Co., Inc., Merchandise Mart, San Francisco 3, California

San Francisco, Los Angeles, San Diego, Portland, Chicago, Seattle, Denver, Dallas, Houston, St. Louis, St. Paul, Detroit, Philadelphia, New York City, Memphis, Tampa, Cleveland, Atlanta, Honolulu. Factory: King City, Calif. 5647R

LeT-W Offers Tandem Scrapers

Tandem scrapers are now available behind all three sizes of two-wheel Tournapull prime movers, as well as the four-wheel Speedpull. Total capacities with the tandems range from 18 cu yd to 56 cu yd.

Coupling or uncoupling of the second scraper can be accomplished in 30 minutes or less. One hitch pin forms the mechanical connection, while quick connect plug-ins provide the hook up for electric cables and air hoses.

According to the manufacturer, the tandem scraper does not require a more powerful pusher, since the scrapers are loaded one at a time. Electric controls for the rear scraper, like the ones on the front, transmit power for tailgate, apron and bowl lift through electric cables. The second scraper rides "piggyback" on the rear of the front unit, providing good maneuverability. LeTourneau-Westinghouse Co., 2301 N. E. Adams St., Peoria, Ill.

Ease of Handling Claimed for 30-Yd Pan

The TS 360, an all-hydraulic motor scraper with a heaped capacity of 30 cu yd, and struck capacity of 22.3 cu yd, is said by the manufacturer to be fast, efficient and easy to handle.

It is powered by a turbo-charged diesel engine that develops 340 hp at 2,000 rpm and moves the 63,150-lb unit at speeds up to 26.3 mph. An air actuated inertia brake on the counter shaft makes it possible to shift from low to higher speeds without double clutching.

A tandem pump, gear driven from the engine crank shaft, provides the hydraulic pressures for steering and for bowl operation. Double acting bowl lift jacks apply a positive downward force on the bowl to insure efficient cutting and loading of heavy material. Ejection of the material is forced by twin, telescoping, hydraulic cylinders with rams pushing from the center of the ejector.

Double acting steering jacks and multiplier links permit a 90 deg turn on a one sixth turn of the steering wheel. The turning radius of the unit is just under 18 ft.

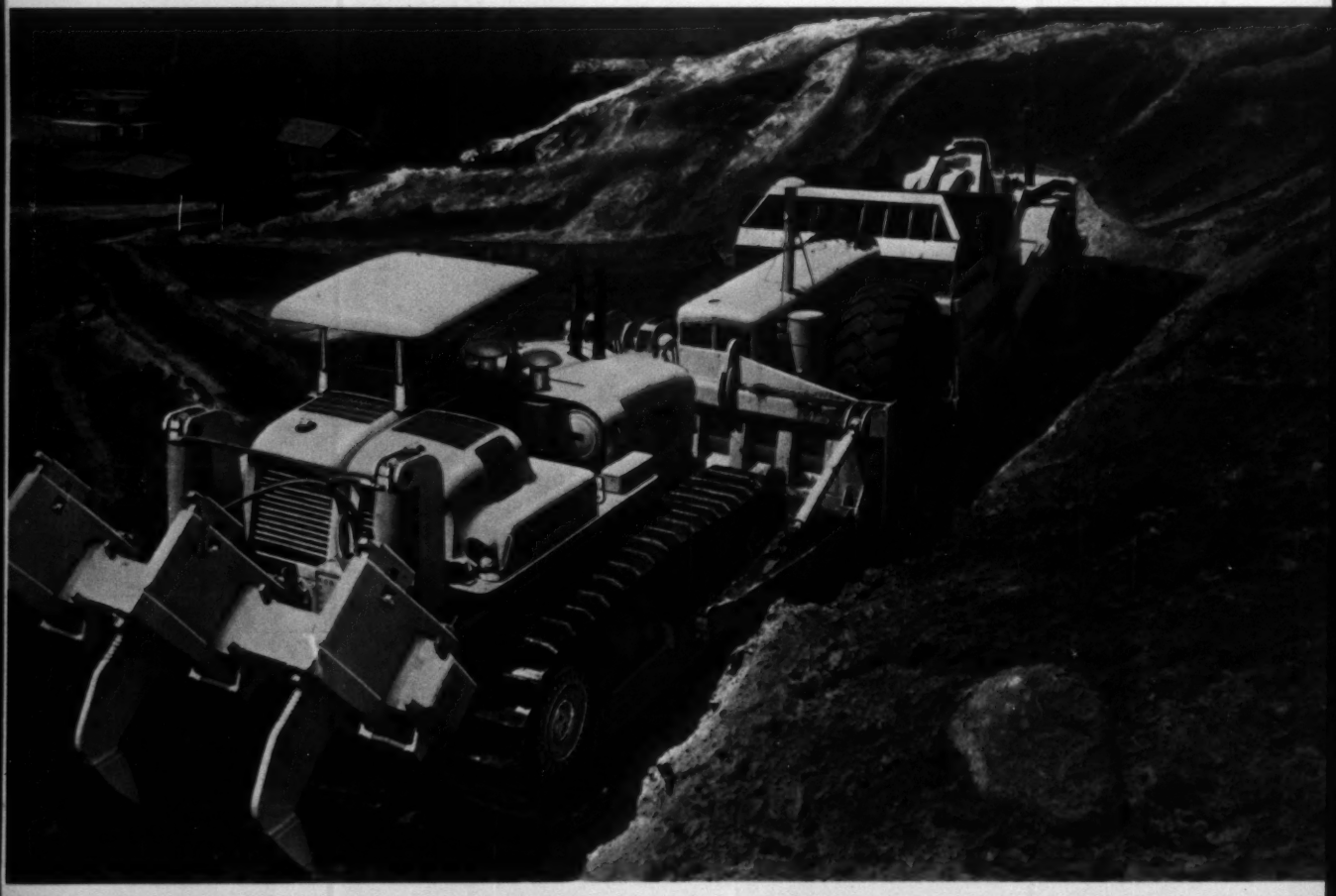
Scraping operations are controlled by two levers; one raises and lowers the bowl, the other controls movement of apron and ejector. Allis-Chalmers Mfg. Co., Milwaukee, Wis.

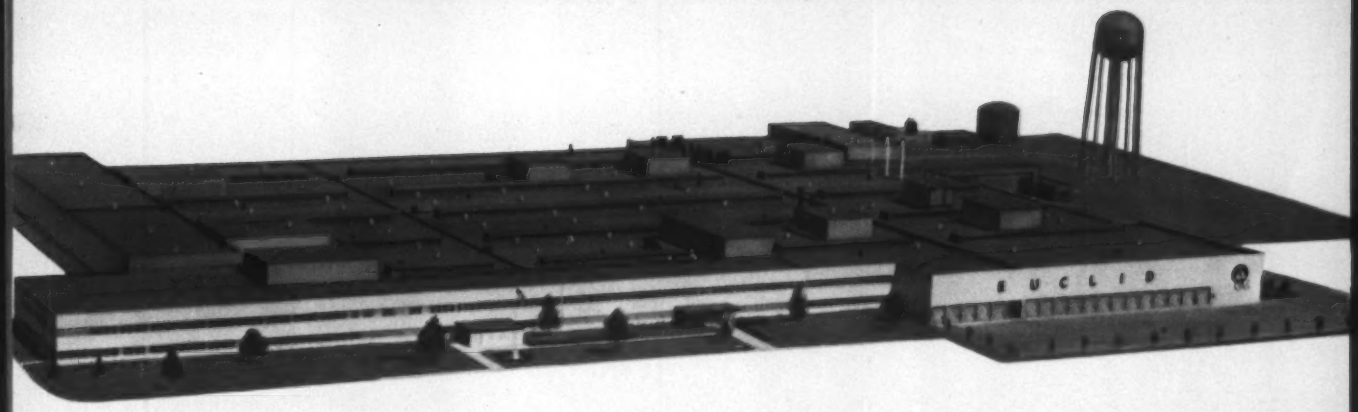
BIG CRAWLER TRACTOR NEWS FROM EUCLID!

C-6 Crawler now in production at Euclid's new tractor plant

A new concept in crawler tractor design, the Model C-6 is the most recent addition to the modern line of Euclid equipment developed and job proved during the past 5 years. Like the big twin-power TC-12 tractor, as well as 5 new scraper models and 4 new rear-dump haulers, the C-6 has the power, speed and versatility to get more work done faster and at lowest cost. All of these new "Eucs" incorporate years ahead engineering that has been a major factor in maintaining Euclid's leading position in the construction equipment industry for many years.

Now a big modern plant at Hudson, Ohio, designed exclusively for the manufacture of Euclid crawlers, is in production on Model C-6 and TC-12 tractors. Here every facility is provided to assure a uniform high standard of product quality that pays off in dependable long life performance of Euclids on every job.





C-6 sets a new standard in 200 h.p. tractor class

Brand new in every way . . . in functional design, ease of operation, service accessibility and productive capacity . . . but a "veteran" of many thousands of operating hours on a wide range of actual jobs and thorough testing at the proving grounds. No other machine in Euclid's history has ever been so completely proved for productive capacity and long service life before the start of volume production.

With 211 net h.p. and job proved Torqmatic Drive, there's a smooth, steady flow of power to match the work load. Changes from any speed range to another and from forward to reverse and back again, are made under full power . . . there are 3 speed ranges in forward and reverse, with a top speed of 7.9 mph.

Dry type air cleaner, full hydraulic track tensioning, independently suspended track frames and final drives, rear mounted cooling system, fewer lube points, and "package" assembly of major components are some of the other C-6 features that make this "Euc" outstanding for easy servicing and maintenance.

Compare and prove for yourself...

THE "EUC" C-6 IS THE LONG-NEEDED "STEP AHEAD" IN CRAWLER DESIGN

When you check all the things that really count in crawler performance . . . easy operation, maneuverability, power and traction for tough work, and minimum downtime . . . you'll see why the new C-6 is your best investment in the 200 h.p. class. No matter what the job is . . . heavy dozing and ripping, push-loading big scrapers, pulling heavy loads, stripping, land clearing, or handling stockpile assignments . . . the versatile C-6 cuts costs and gets more work done faster.

The Euclid dealer in your area will be glad to show you why the C-6 is your best bet for increased production at lowest overall cost.

GM GENERAL MOTORS EUCLID

EUCLID DIVISION OF GENERAL MOTORS

Cleveland 17, Ohio

EUCLID (GREAT BRITAIN) LTD.
Lanarkshire, Scotland

. . . a complete line of equipment for heavy earthmoving, mining, logging and many industrial operations . . .

Printed in U.S.A.

Twin-Engine Street Sweeper Features Independent Drive

A twin-engine street sweeper has a separate rear engine to drive the sweeping mechanisms. Brooms are said to operate at maximum efficiency at all times, independent of the vehicle's forward speed. Operator efficiency and sweeping production are increased, according to the manufacturer.

The unit also has an "automatic full floating" feature for both rear pick up broom and gutter brooms. The operator originally makes one spring tension adjustment controlling the "touch" of the bristles to the pavement. From then on, the automatic feature controls up and down motion of the brooms to follow the contours of the pavement. Equipped with four wheel hydraulic brakes and other safety features, the unit has a dirt hopper of 3½ cu yd capacity. Steller, Millar & Lester, Inc., 2700 W. Third St., Los Angeles 57, Calif.

Curing Compound Cures, Hardens and Seals

Dekote, a curing compound for newly placed concrete, hardens, seals and dustproofs at the same time, according to the manufacturer.

The compound is a clear liquid solution that is applied to fresh concrete using spray, roller or brush equipment. It is reported to have fast-drying properties and should retain more than 95% moisture to permit complete hydration and maximum concrete strength. Dekote will seal the pores of concrete floors against most acids, oils, greases and other foreign materials; and it will prevent deterioration and dusting, the manufacturer claims.

Dekote need not be removed before the application of secondary floor treatments. claims the manufacturer. After a 28-day curing period, paints, tile or lineoleum can be applied directly to the surface. Tretol, Inc., 7252 W. 66 St., Chicago, 38, Ill.

Bruning Adds a Line of Surveying Instruments

Charles Bruning is now distributing Path surveying instruments in addition to the Brunson line.

The Path instruments are equipped with Japanese lenses. The line includes 4-in. and 6-in. transits, transit levels, dumpy levels, eye levels, tilting levels and pocket levels. Charles Bruning Co., Inc., 1800 W. Central Rd., Mount Prospect, Ill.

THE IROQUOIS DAM...

A RECENT S & H FOUNDATION INVESTIGATION AND PRESSURE GROUTING PROJECT

Photo courtesy of Power Authority of the State of New York

Thousands of feet of drilling and sampling were performed for the initial planning of the Iroquois Dam (St. Lawrence Seaway). The accurate soil samples and high quality rock cores recovered contributed materially to the design of a suitable and firm foundation.

In the second phase of our work on the Iroquois Dam we drilled the necessary grout-holes and performed the pressure grouting. Completely sealing off the faults and cavities that our drilling revealed required the injection of over 10,000 cu. ft. of cement grout.

Other St. Lawrence projects on which Sprague & Henwood services were utilized include the Long Sault Dam, the Barnhart Island Power Dam and the Massena Intake.

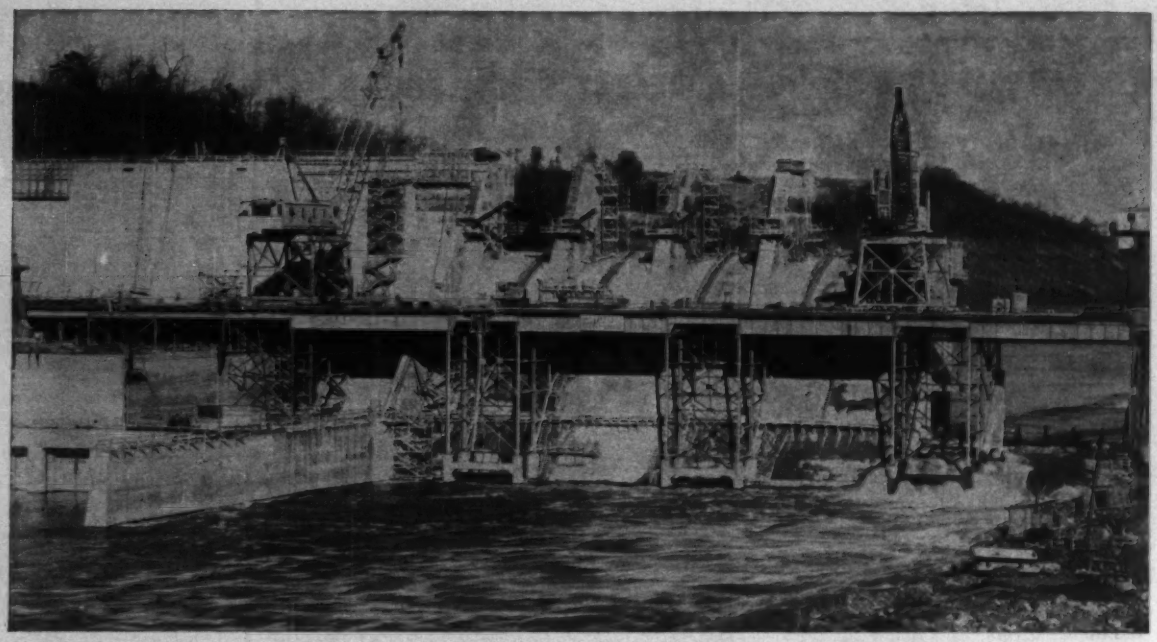
Sprague & Henwood's unbeatable combination of experienced drilling and grouting personnel, modern equipment, and expert supervision is your assurance of the satisfactory completion of your work. Behind this combination is over 75 years of accumulated knowledge and experience in the drilling field.

For foundation investigation and pressure grouting required for tunnels, buildings, dams, bridges, or highways, contact the Sprague & Henwood branch nearest you.

SPRAGUE & HENWOOD, Inc.

SCRANTON 2, PA.

BRANCH OFFICES: NEW YORK • PHILADELPHIA • PITTSBURGH • ATLANTA
GRAND JUNCTION, COLORADO • BUCHANS, NEWFOUNDLAND



Clyde Whirley No. CW-3264 on Douglas Dam job. Also shown is No. CW-3266, now in use at Widows Creek Steam Plant near Stevenson, Ala.

Performance record of Crane No. CW-3264 shows why

Clyde Whirleys are best for dam construction

The severest appraisal of value of a machine is its record of performance . . . its use and re-use on work for which it has been engineered. Continued re-use over many years writes a record of longevity of useful and profitable service such as this record of Clyde Whirley No. CW-3264:

1940 Received new at Cherokee Dam near Jefferson City, Tenn.

1942 Douglas Dam near Dandridge, Tenn.

1943 Fontana Dam near Bryson City, N. C.

1946 Sold. Used at Davis Dam near Kingsman, Ariz.

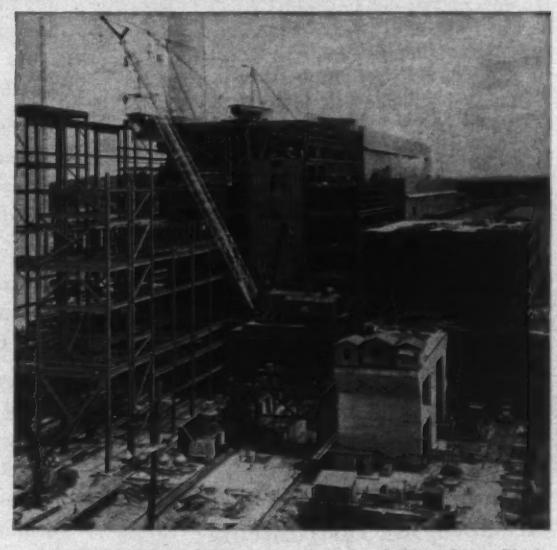
1950 Re-purchased by original owner. Used at Boone Dam near Elizabethton, Tenn.

1952 Fort Patrick Henry Dam near Kingsport, Tenn.

1953 Gallatin Steam Plant near Gallatin, Tenn. through 1959.

1960 Colbert Steam Plant near Tuscumbia, Ala.

Pre-World War II and into the 'sixties'! Re-purchased by the original owner! What better recommendation for the quality engineering and rugged and dependable construction of Clyde Whirleys . . . or any other material handling equipment that bears the Clyde trademark?



Clyde Whirley No. CW-3264 at work on the Gallatin Steam Plant. Boom length has been increased to 167'. Gantry has been increased to 62' and will be increased to 95' for Colbert Steam Plant job. Hoist motor size has not been increased.

. . . and No. CW-3264 is still in the prime of its youth!

CLYDE RIC

A SUBSIDIARY OF REPUBLIC INDUSTRIAL CORPORATION

CLYDE IRON WORKS, Inc.

Established 1899

DULUTH 1, MINNESOTA

HOISTS • DERRICKS • WHIRLEYS • BUILDERS TOWERS • UNLOADERS • CAR PULLERS • ROLLERS

Men and Jobs

D. B. Steinman Raises Three to Partnership

Effective January 1, R. M. Boynton, C. H. Gronquist and J. London were taken into partnership by D. B. Steinman, consulting engineer, New York City. The new firm name will be Steinman, Boynton, Gronquist & London.

Each of the three new partners has been with Mr. Steinman for more than thirty years. They have participated in the design of such notable suspension structures as the Mackinac Straits Bridge, Michigan; Kingston-Rhinecliff Bridge over the Hudson River; Mount Hope Bridge, Rhode Island; and the Deer Isle-Sedgewick Bridge, Sargentville, Me. They also designed the Charter Oak Bridge, Hartford, Conn. and Quinnipiac River Bridge, New Haven, Conn., with long continuous plate-girder spans; the Henry Hudson Arch, New York City; and the Thousand Islands International Bridge, over the St. Lawrence River.

Mr. Boynton is a 1920 civil-engineering graduate of the University of Maine. He joined Mr. Steinman in 1958 after eight years with the Erie Railroad Co.

Mr. Gronquist received a B.S. in 1925 and an M.S. in 1927 from Rutgers. He joined Mr. Steinman in 1927.

Mr. London is a 1920 civil-engineering graduate of the College of the City of New York. He went with Mr. Steinman in 1922, after brief experience as a draftsman and instructor.

Partners Names Added To Parsons, Brinckerhoff

Parsons, Brinckerhoff, Hall & Macdonald, New York City engineers, has changed its name to Parsons, Brinckerhoff, Quade & Douglas, incorporating the names of the firm's two senior partners. There are six active partners: Maurice N. Quade, Walter S. Douglas, Alfred Hedefine, John O. Bickel, Rush F. Ziegenfedler, and W. H. Bruce, Jr.

The firm was founded in 1885 by William Barclay Parsons. In its three-quarters of a century the firm has been involved in such outstanding projects as the Garden State Parkway in New Jersey, the Hampton Roads Bridge-Tunnel Project in Virginia and the Sunshine Skyway in Florida.

Current activities include the Bergen-Passaic Expressway in New Jersey, the second Elizabeth River Tunnel in Virginia, the 62nd Street Bridge in Pittsburgh, water supply for Newark and Akron and sewerage systems for Binghamton and Baton Rouge.

(*Men and Jobs continued p. 64*)

YESTERDAY it was the St. Lawrence Seaway and a record span across the Straits of Mackinac. Today it's a missile launching pad. Tomorrow, who knows? But whatever new projects lie ahead, contractors have a right to expect their bonding service and their insurance protection to be just as modern as their bold new ventures.

THE FIDELITY AND CASUALTY COMPANY OF NEW YORK keeps pace with progress. New projects are carefully studied, the risks analyzed and solutions found. When safety engineering service is needed, F & C provides it.

This is your assurance of bonding service that fits your specific needs—skillfully-patterned insurance that gives you the best in protection.

The Fidelity and Casualty Company of New York

"Writing Bonds Since 1876"

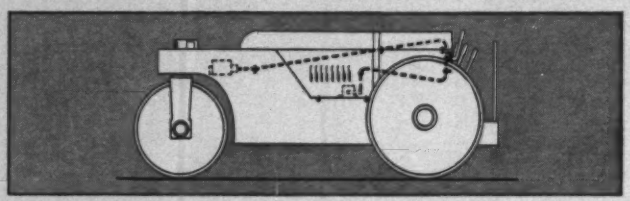
a member company of America Fore Loyalty Group

TRU-LAY PUSH-PULLS

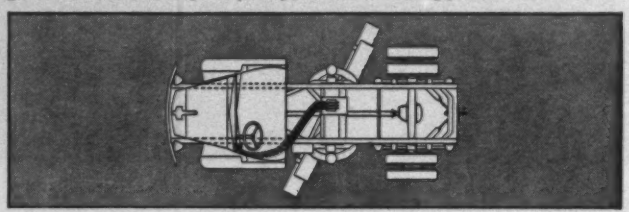
give trouble-free, lifetime service for remote control of construction and quarrying equipment

Operators of Construction or Quarrying Equipment can be certain of maintenance-free service from TRU-LAY PUSH-PULL CONTROLS because of their precision manufacture—rugged construction—lubrication for life of the inner, working member at the factory—complete sealing of the entire unit (a vitally important factor in tough, outdoor operations) against dust, dirt or moisture.

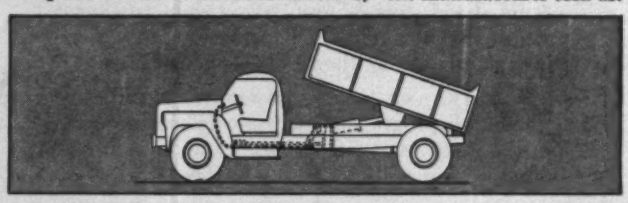
We have never heard of a TRU-LAY FLEXIBLE PUSH-PULL CONTROL *wearing out in normal service.* Examples of heavy-duty applications are shown below. Users of such equipment benefit from simplified equipment design and improved operation.



• Shown here is a tandem roller where two different PUSH-PULL cables are used to facilitate operation. One cable, 156" long, is capable of a 2" stroke to operate the hydraulic steering valve at the front of roller. The second, shorter cable operates tail shaft governor which keeps roller speed constant, upgrade or down.



• More room in the cab of this snow plow was one of the advantages of installing PUSH-PULL cables. This permitted the hydraulic valve to be located at a more convenient point in the chassis. "There are so many things you can do with these flexible cables compared to the old fixed installations," the manufacturer told us.



• Raising and lowering of the dump body on a famous line of hydraulic dump trucks is via TRU-LAY PUSH-PULL cables. With PUSH-PULLS this merely entails the pulling of a button on the dash. The installation did away with cut-up floor boards and levers in the truck cab. TRU-LAY PUSH-PULLS brought easier installation, more convenience and less maintenance.

For complete information
we'll be glad to send you a copy of ***Bulletin DH-461...***

ACCO
Automotive and Aircraft Division
AMERICAN CHAIN & CABLE
601-F Stephenson Bldg., Detroit 2
6800-F East Acco Street, Los Angeles 22 • 929-F Connecticut Ave., Bridgeport 2, Conn.

. . . Men and Jobs

Wyoming Highway Division Advances Seven Engineers

Seven Wyoming highway engineers have been promoted as the division continues its reorganization program.

C. W. Beaver takes over as federal aid highway engineer, a newly created position, to supervise all federal aid matters. He has been state design engineer since last June. He joined the department in 1929 and for 13 years was office and plans engineer.

Glen T. Shrum, who has been an assistant state construction engineer replaces Mr. Beaver as state design engineer.

Oliver F. Baldwin has been appointed construction engineer after working as an assistant state construction engineer for two years. He has been with the department since 1929.

W. G. Kinsley, is the new maintenance engineer after serving for a year as an assistant state maintenance engineer. He joined the department in 1939.

Warren A. Gallup, district engineer at Cheyenne, C. R. Lord, district engineer at Basin and Joseph J. Evans, district engineer at Rock Springs have been advanced to assistant state construction engineers.

Gwilym A. Price Awarded Fritz Achievement Medal

Gwilym A. Price, chairman of the board of directors of the Westinghouse Electric Corp., received the John Fritz Gold Medal for notable achievement.

The medal is awarded annually by the American Society of Civil Engineers; American Institute of Mining Metallurgical and Petroleum Engineers; American Society of Mechanical Engineers; and the American Institute of Electrical Engineers.

Mr. Price is the first man with a non-engineering background to receive the award in its 58-year history.

Careers

Business

Frank Roodman has been appointed assistant manager of engineering and construction for the five-state western district of The Austin Co., Cleveland engineers and builders. He has been engineering coordinator for missile projects at the Austin general offices in Cleveland.

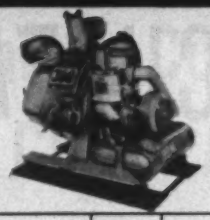
Michael P. W. Stone has been named director of corporate development for the Utah Construction and

(*Men and Jobs continued p. 68*)

Choose from a complete line of:

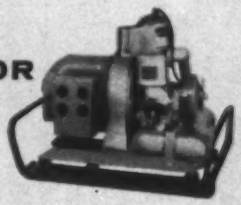
HOMELITE CARRYABLE EQUIPMENT

CHOOSE FROM A COMPLETE LINE OF HOMELITE CARRYABLE PUMPS



Size	Capacity	Wt. in lbs.	Model
	CENTRIFUGAL PUMPS		
1½"	5,500 g.p.h.	45	20S1½
2"	10,000 g.p.h. (slow speed)	69	35S2-1
2"	10,000 g.p.h.	69	35S2-1R
3"	18,000 g.p.h. (slow speed)	103	8S3-1
3"	18,000 g.p.h.	103	8S3-1R
3"	102 g.p.m. at 60 p.s.i. 250 g.p.m. — open discharge	103	8S3-1P
	DIAPHRAGM PUMP		
3"	5,000 g.p.h.	120	20DP3

HOMELITE HAS A CARRYABLE GENERATOR FOR EVERY JOB



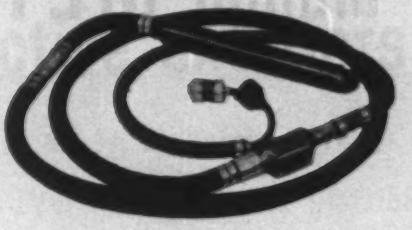
Capacity (Watts)	Current	Wt. in lbs.	Model
1,500	115 volt, 60 cycle, AC	90	35A115
3,000	115 volt, 60 cycle, AC	140	8A115
3,000	115/230 volt, 60 cycle, AC	141	8A115/230
3,000	115 volt, 60 cycle, AC	170	41A115
3,000	115/230 volt, 60 cycle, AC	171	41A115/230
3,000	230 volt, 180 cycle, 3-phase AC plus 110 volt DC	143	8HY

HOMELITE CHAIN SAWS

QUICK SELECTOR GUIDE FOR EVERY CUTTING NEED

	ZIP	WIZ	7-19C	7-21C	9-23	9-26
Wt. in lbs. (Engine Only)	20	20	19	21	23	26
Type of Drive	Direct	Gear	Direct	Gear	Direct	Gear
Tree Sizes Model Will Cut (Dia.)	Up to 3'	Up to 5'	Up to 5'	Up to 7'	Up to 7'	Up to 10'
Straight Blade Bar Lengths	12" to 21"	14" to 28"	12" to 30"	14" to 60"	17" to 44"	18" to 60"

HOMELITE ONE-MAN CONCRETE VIBRATORS



Type	Head Dia.	Motor	Wt. (Complete)	Model
Motor-in-head	2.3"	High-Cycle*	47 lbs.	VH-LD
Motor-in-head	2½"	High-Cycle*	41 lbs.	VH-10
Motor-in-head	4"	High-Cycle*	58 lbs.	VH-HD
Motor-in-head	2¾"	110 v. AC-DC	42	VU-MH
Flexible Shaft	1¼" & 1⅞"	110 v. AC-DC	41	MU-FS

ELECTRIC TOOLS

BUILDER'S HAMMERS

Weight	Capacity (Drill Sizes)	Motor	Model
13 lbs.	¼" to 1⅛"	115 volt AC-DC	BH-13-U
21 lbs.	½" to 2⅜"	115 volt AC-DC	BH-21-U
20 lbs.	½" to 2⅜"	High-Cycle*	BH-HC

PAVING BREAKER

Does all jobs that a 40-45 lb. air hammer will do. High-cycle motor. Weight: 60 lbs.

Light-duty model also available. Weight: 64 lbs.

ROCK DRILL

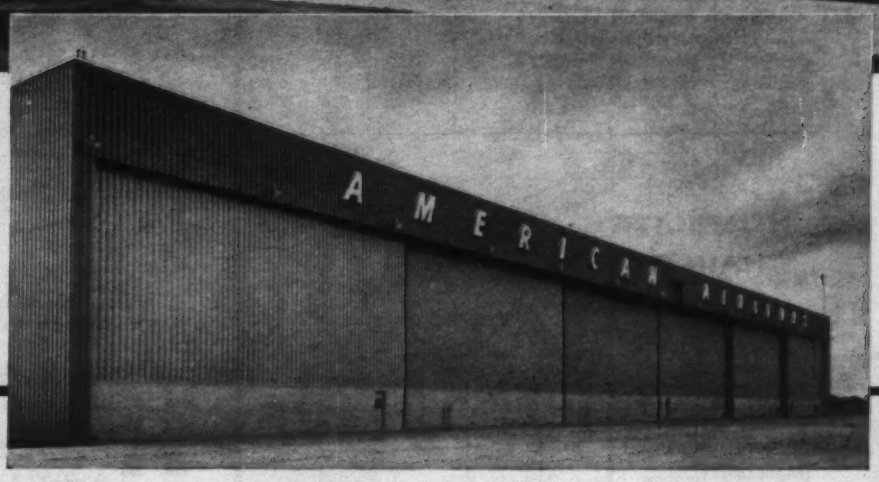
Drills holes up to 2" in diameter, up to 20' deep. High-cycle motor. Weight: 65 lbs.

A complete line of accessories and tools are available from Homelite for the above builder's hammers, paving breakers, and rock drill.

*180 cycle, 230 volt, 3-phase AC power for high-cycle tools is supplied by carryable Homelite generator, Model 8HY.

HOMELITE
A DIVISION OF TEXTRON INC.
1101 RIVERDALE AVE., PORT CHESTER, NEW YORK
MANUFACTURERS OF CARRYABLE PUMPS
GENERATORS • BLOWERS • CHAIN SAWS
IN CANADA: TERRY MACHINERY CO., LTD.

Mahon METAL CURTAIN WALLS



Maintenance Hangar for American Airlines located on the Detroit Metropolitan Airport. Mahon Metal Curtain Walls in blue porcelain finish were employed, in this instance, with natural brick to produce an attractive exterior. Wall Plates of the same material painted gray were employed to face the large hangar doors.

Architects & Engineers:
Giffels & Rossetti

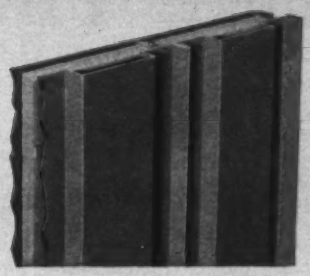
General Contractor:
A. J. Etkin Construction Co.

Serving the Construction Industry Through Fabrication of Structural Steel, Steel Plate Components, and Building Products

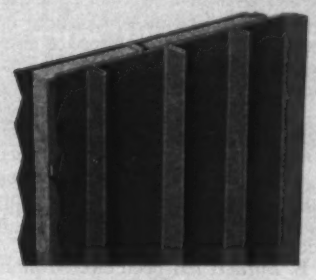
in Bright Metal or Colored Porcelain Produce Clean, Attractive Exteriors!

Mahon Walls can be Erected up to 60 Ft. in Height without a Horizontal Joint . . . Vertical Joints are Invisible

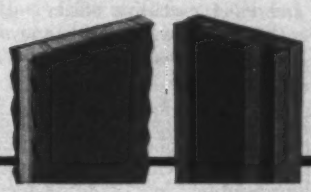
ALUMINUM or STAINLESS
GALVANIZED or PAINTED STEEL



MAHON FLUTED WALL
FIELD CONSTRUCTED



MAHON RIBBED WALL
FIELD CONSTRUCTED



FLUSH FLUTED
MAHON PREFAB WALL PANELS

☆ OTHER MAHON BUILDING PRODUCTS and SERVICES:

- Underwriters' Rated Metalclad Fire Walls
- Rolling Steel Doors (Standard or Underwriters' Labeled)
- M-Floors (Electrified Cellular Steel Sub-Floors)
- Long Span M-Decks (Cellular or Open Beam)
- Steel Roof Deck
- Permanent Concrete Floor Forms
- Acoustical and Troffer Forms
- Acoustical Metal Walls and Partitions
- Acoustical Metal Ceilings
- Structural Steel—Fabrication and Erection
- Steel Plate Components—Riveted or Welded

☆ *For INFORMATION See SWEET'S FILES or Write for Catalogues*

THE R. C. MAHON COMPANY • Detroit 34, Michigan
Sales-Engineering Offices in Detroit, New York, Chicago, Los Angeles and San Francisco • Sales Representatives in all other Principal Cities

of Steel and Aluminum

MAHON

Self-leveling level saves up to 50% surveying time

The Ertel Level, proved successful throughout the United States, automatically assumes a truly horizontal line of sight once it has been approximately leveled by its circular bubble.

The self-leveling system consists of two carefully-positioned prisms which are moved by a gravity-operated pendulum to a precise realignment with any accidental change of instrument setting—such as one tripod leg sinking into soft soil. *During extensive leveling operations, the instrument cuts working time as much as 50%.*

The Ertel INA Level—made in West Germany—is 5⅛" high; has a 30x telescope; weighs 19¼ lbs. (including tripod). Write for Bulletin INA which gives complete data.

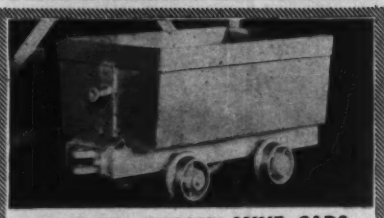
PRECISION INSTRUMENTS INC.
1900 FIFTH AVENUE, TROY, NEW YORK

ELGOOD
Hydraulic & Mechanical
JACKS
Capacities to 600 Tons—48" Travel

Jacking Equipment for Pipe Pushing Erection, Pile Driving, Pile Testing, Slip Forms, Tunnel Shields, Prestressed Concrete, many other applications

RENTALS — SALES — DESIGN
Large Stock — Immediate Delivery
Write for Job Fact Sheets

ELGOOD EQUIPMENT CORP.
373 Ten Eyck St., Brooklyn, N.Y.
HY 7-5445



PRACTICAL, RUGGED MINE CARS
Side Dump and Rocker Dump cars, 24" gage. Tunnel cars, 18" and 24" gage. Various capacities. Ask for Bulletin No. 18.

MAYO
TUNNEL AND MINE EQUIPMENT
Lancaster, Penna.

Mining Co. In his new position, Mr. Stone will examine growth opportunities for the company and direct the company's research and analytical services. He will continue to serve as assistant to the vice president.

Andrew J. Cox is the new administrative assistant to the general manager of the construction machinery section of Chain Belt Co., Milwaukee. He joined the company five years ago after working in naval ordnance manufacturing at York, Pa.

P. L. Griffith has been elected vice president of James King & Son Inc., general contractors. Mr. Griffith, a veteran of 25 years in the construction consultant business, comes to King from Kelly & Gruzen, architects and engineers.

G. C. Gerke has formed the construction consultant firm of **Richard C. Gerke & Associates,** Pasadena, Calif.

Jamie H. Kerr, William M. Mooney and **James B. Smith** are the new district managers of the Raymond Concrete Pile Co., a division of Raymond International Inc. Mr. Kerr takes over in St. Louis, Mr. Mooney in Kansas City and Mr. Smith in Houston.

Hugh E. Keeler, professor emeritus in mechanical engineering at the University of Michigan, has been named a director of the Hinchman Corp., Detroit.

Wayne A. Gregory is the new manager of operations for the Buffalo Crushed Stone Corp. For the past three years he has been group superintendent at Houdaille Construction Material, Inc., Morristown, N. J.

M. M. Anderson takes over as vice president of engineering for the Stran-Steel Corp., Detroit. He will supervise the company's product development and engineering functions. Mr. Anderson, who has been with the company for fifteen years, has been chief engineer.

Roland C. Disney has been elected president of the Gates Engineering Co., Wilmington, Del. He came to Gates in 1950 from the Whitcomb Locomotive Works, Rochelle, Ill. where he was vice president. From 1950 to 1957 he was vice president of sales for Gates and in 1957 was elected executive vice president.

J. David Welch and **Martin Malinofsky** have opened consulting engineering and geology offices in Summit, N. J. Both men have been associated with Howard, Needles, Tammen & Bergendoff, consulting engineers of New York City. Mr. Welch was chief soils engineer and Mr. Malinofsky was engineering geologist.

W. R. Cooper has been named a vice president for Arabian American Oil Co. He has been general manager for engineering and construction. **L. M. Snyder,** who has been vice president in charge of engineering, construction and local sales, has been promoted to vice president in charge of relations for Aramco. Both men make their headquarters in Dharan, Saudi Arabia. Mr. Snyder replaces **R. A. Eeds** who resigned to take over as president of Esso Standard Inc., a subsidiary of Standard Oil of New Jersey.

N. R. Crump has been elected a director of the International Nickel Co. of Canada, Ltd. He is also president of the Canadian Pacific Railway Co. Mr. Crump joined Canadian Pacific in 1920 in the motive power department and worked his way through various positions until he became president in 1955.

Harry J. Stellman is coordinator of construction activities for the Alfred I. duPont Estate, Jacksonville, Fla. The Estate owns the St. Joe Paper Co. and the Florida Group of Banks. Before taking over his new job, Mr. Stellman was manager of the Florida division of the Daniel Construction Co. He has also held the position of vice president of Starrett Brothers & Eken, New York City.

Russell Field takes over as vice president of project developments for Holmes & Narver, Inc., Los Angeles engineers and constructors. He came to Holmes & Narver in 1954 from the Atomic Energy Commission, where he was with the commercial service division in Oak Ridge, Tenn.

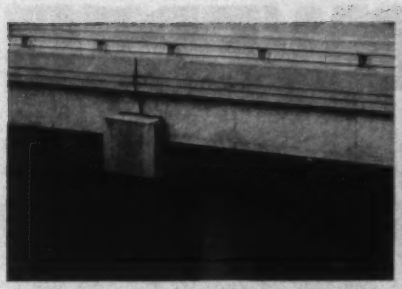
The O. R. Burden Construction Corp., Tulsa has formed the **Universal Engineers & Constructor, Inc.,** Tulsa. The new company pursues diversified types of engineering and construction including sewage disposal, water supply and power plants. **O. R. Burden** is president.

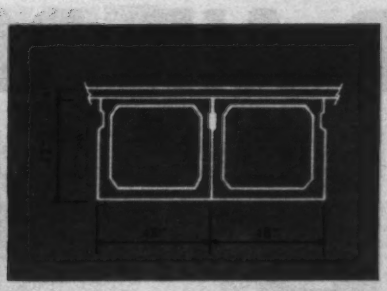
C. B. Burnett has been elected president and chief operating officer of Johns-Manville Corp. He is also chairman and chief executive officer. He joined the company in 1931 and in 1957 was named executive vice president and a director.

J. P. Craven is a vice president of the Babcock & Wilcox Co. He will direct the boiler division's manufacturing department. Mr. Craven, who joined the organization in 1928, succeeds **Paul H. Setzler** who has resigned.

C. B. Wigton Jr. has been elected president of Wigton-Abbott Corp. engineers and constructors of Plainfield, N. J. **C. Benson Wigton Sr.** co-founder of the firm and president for 35 years, takes over the newly created post of chairman of the board. The

(*Men and Jobs continued p. 72*)

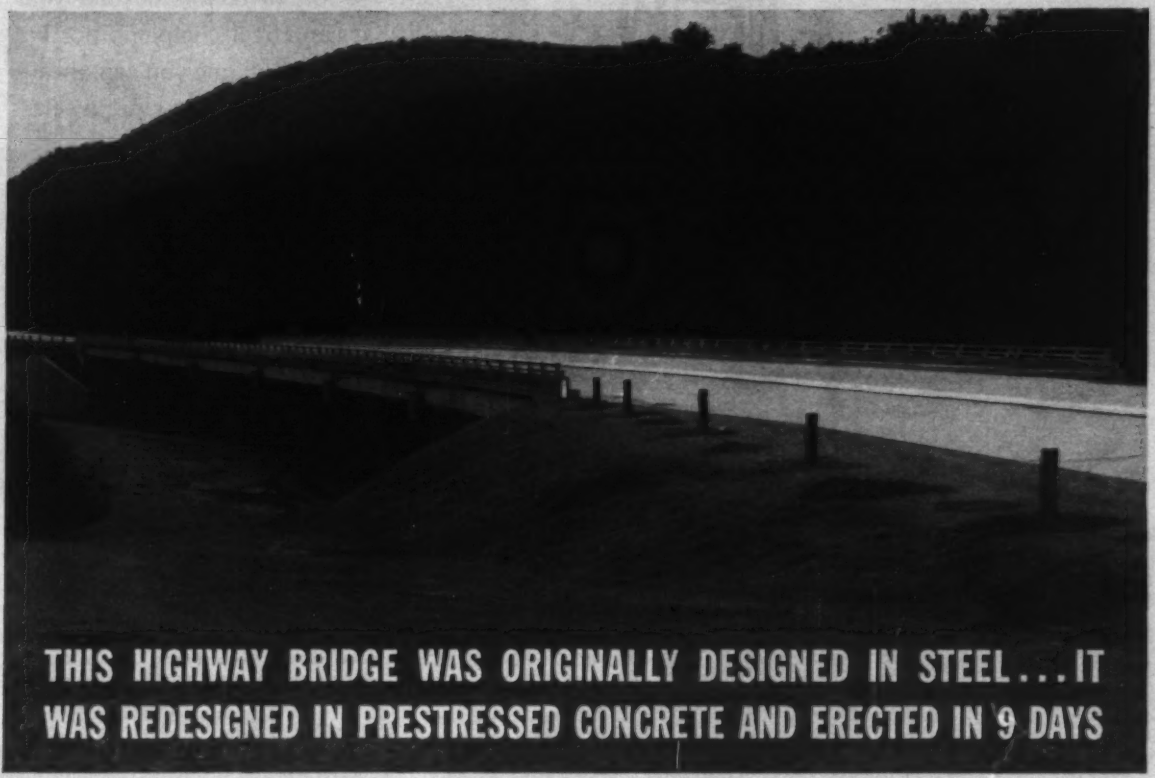




far left
Detail of bridge showing cut outs in beams at pier cap, giving maximum clearance. Structure's 96 box beams were furnished through American Marietta Co. by Pennsylvania Prestress Co. and Schuylkill Products Company. Other five bridges fabricated by American Marietta Company.

left
Partial cross section of a deck-type bridge, showing two precast rectangular sections and poured-in-place concrete topping.

below
Overall view of Structure #4, one of 6 highway bridges designed in Prestressed Concrete by American Marietta Company. Contractor: C. J. Langenfelder, Baltimore, Md. Stress-relieved strand by Roebling.



THIS HIGHWAY BRIDGE WAS ORIGINALLY DESIGNED IN STEEL . . . IT WAS REDESIGNED IN PRESTRESSED CONCRETE AND ERECTED IN 9 DAYS

This bridge is Structure #4, Duncannon By-Pass, Perry-Dauphin Counties, Pennsylvania. Because of prestressed concrete's inherent economy and the possibility of wintertime erection, it was redesigned from steel to prestressed, an alternate permitted by the Pennsylvania Department of Highways.

It is particularly interesting since underclearance conditions required special cut outs at the ends of all the beams, making it, perhaps, the only bridge of its exact type in the country. It was designed by the Concrete Products Division, American Marietta Company, Chicago, Illinois, and is a curved structure with six 80′ spans utilizing 42″ x 48″ box beams with a composite slab. It is on a spiral runout of a horizontal curve with the post-tensioned piers being radial, thus making the outside fascia beams longer than the inside fascia beams. The post-tensioned pier cap girders (precast at job site), plus the 96 pretensioned box beams for the deck were erected in 9 working days.

Maximum headroom was obtained by using 48″ wide x 50″ deep post-tensioned pier cap girders and by cutting out the beams at the point where they framed into the girders (see detail above).

Roebling has been a strong and ardent advocate of the prestressed concrete method since its introduction in the United States. Our knowledge and experience covers all aspects and we will be happy to share it with you. Your need may be as simple as the names of prestressed fabricators in your area or, perhaps, your question may have to do with beam designing procedure or a request for data on typical prestressed members. Whatever it may be—and for whatever structure: schools, garages, transportation terminals, piers, bridges or office buildings (to name a few)—you have only to address your questions to Construction Materials, John A. Roebling's Sons Division, Trenton 2, New Jersey.

Now available on request—Roebling Data Sheet PC 946 "Design Procedure for a Simple-Span Prestressed Concrete Beam." Based on ACI-ASCE Committee 323 Report "Tentative Recommendations for Prestressed Concrete," this procedure is an excellent guide for engineers in the design of prestressed concrete members.

ROEBLING

Branch Offices in Principal Cities
John A. Roebling's Sons Division
The Colorado Fuel and Iron Corporation

ONLY CP AIR-POWERED

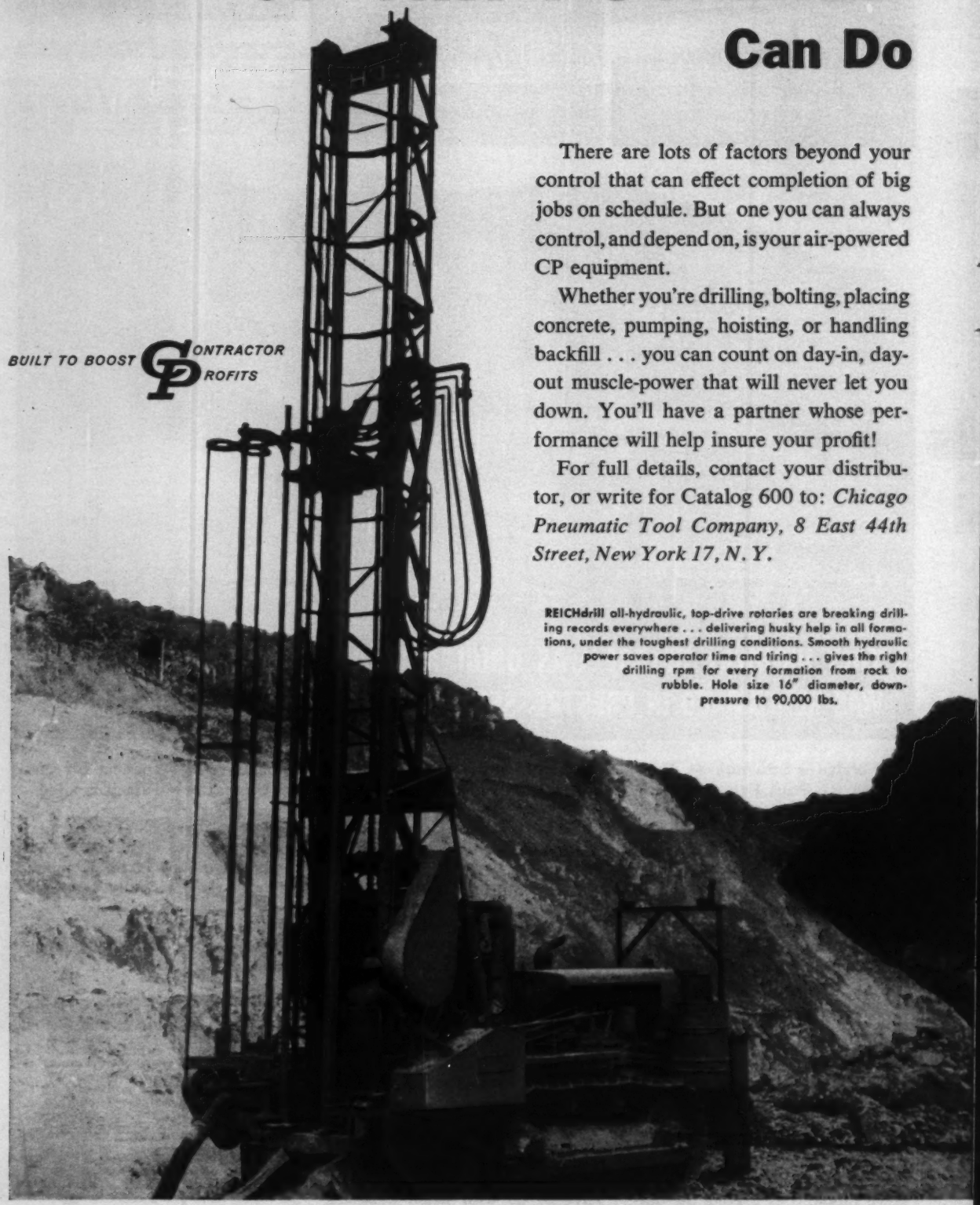
Can Do

BUILT TO BOOST CONTRACTOR PROFITS

There are lots of factors beyond your control that can effect completion of big jobs on schedule. But one you can always control, and depend on, is your air-powered CP equipment.

Whether you're drilling, bolting, placing concrete, pumping, hoisting, or handling backfill . . . you can count on day-in, day-out muscle-power that will never let you down. You'll have a partner whose performance will help insure your profit!

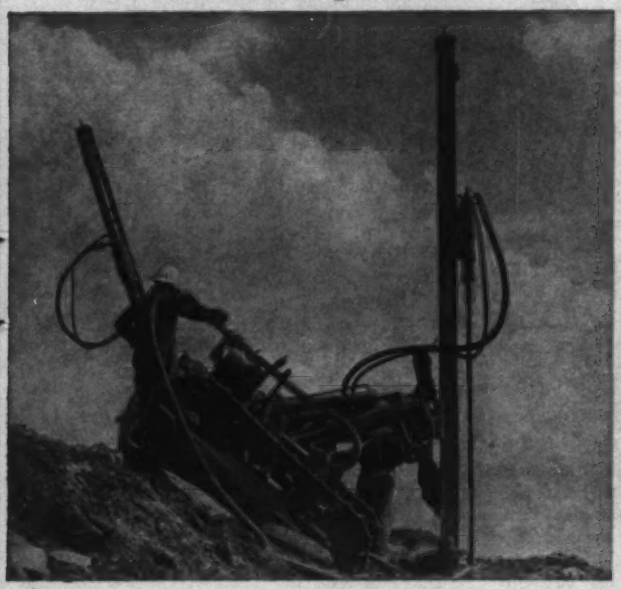
For full details, contact your distributor, or write for Catalog 600 to: *Chicago Pneumatic Tool Company, 8 East 44th Street, New York 17, N. Y.*



REICHdrill all-hydraulic, top-drive rotaries are breaking drilling records everywhere . . . delivering husky help in all formations, under the toughest drilling conditions. Smooth hydraulic power saves operator time and tiring . . . gives the right drilling rpm for every formation from rock to rubble. Hole size 16" diameter, down-pressure to 90,000 lbs.

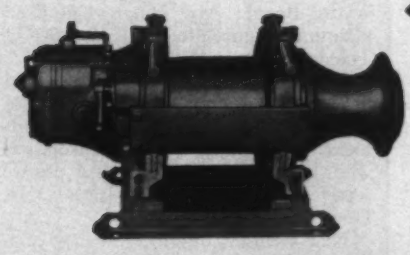
EQUIPMENT

So Many Jobs...So Well!



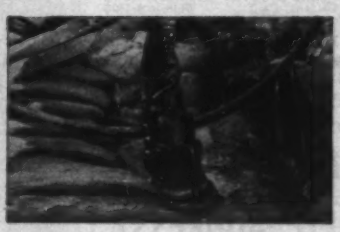
G-800 TRACDRIL, a really hard-hitting percussive drill. Uses 4½" bore Deep Hole Drills—capacity: 3-inch holes to 75 feet. Built for extra bad ground and hard rock. Automatic brakes take hold the instant traction motors are stopped . . . prevent inching . . . insure safety.

CP-600 "POWER VANE" ROTARY COMPRESSORS, shoulder-to-shoulder, or singly, keep air-driven drills slugging 'til you tell 'em to stop. Other capacities from 125 to 900 cfm, gasoline or diesel engine drive.



CP AIR WINCH with Cathead: Capacity to 4000 lbs; cable speeds to 175 fpm at full load. Operator has absolute control over infinite combinations of hoisting and lowering speeds, and braking action. Exclusive Cathead arrangement operates independently, permits extremely accurate spotting of loads.

CP-610-RP REVERSIBLE IMPACT WRENCH... favorite of bolting gangs everywhere. Light weight and short overall length makes it easy to handle. Capacity to 1¼" bolt size. Power bonus means fast rundowns and absolute tightness. Torque Control models available.



CP-20 PORTABLE SUMP PUMP can handle 185 gpm at 70 ft. head; tandem models 235 gpm at 120 ft. head. This pump doesn't need watching... just hook-up the air and discharge lines and submerge it. No priming required, and no damage if pump runs dry.

Chicago Pneumatic 8 East 44th Street, New York 17, N. Y.

PORTABLE AIR COMPRESSORS • PNEUMATIC and ELECTRIC TOOLS • REICHdrills • AIR-BLAST BITS • ROCK DRILLS

A TOOL FOR CREATIVE DESIGN

BREAKTHRU

The Prescon System of Prestressed Concrete

Architects, designers, and engineers seeking tools to give full application of their creative ideas in structural design and appearance will find that **concrete with living strength** from prestressing by the Prescon System of post-tensioning will greatly increase their architectural control over shape, span and load limits.

Breaking through the old design barriers imposed by conventional materials, today's architect or engineer who specifies the Prescon System of prestressed concrete can design for immediate building structures that will meet every future requirement of eye appeal and useful efficiency.

Give free range to your creative ideas, call your Prescon representative for specialized engineering and recommendations on using Prescon System in prestressed concrete for the long span beams and girders, lightweight decking members, poured in place floors and roofs and other exciting features of "breakthru design." Write for technical brochure, or check Sweet's Catalog.

PRESCON

©The Prescon Corp.

THE PRESCON CORPORATION

General Offices and Southwestern Division:

P. O. Box 4186 • TUlip 2-6571 • Corpus Christi, Texas

ATLANTA
P. O. Box 1175
DRake 7-3853
North Decatur, Ga.

CHICAGO
Crest Concrete Systems, Inc.
P. O. Box 38
BIshop 2-1479
Lemont, Ill.

DENVER
1445 West Quincy
SUnset 1-4798
Englewood, Colo.

LOS ANGELES
P. O. Box 407
FAculty 1-3377
Gardena, Calif.

NEW YORK
P. O. Box 9008
(Albany, N. Y.)
DElmar 9-1876
Delmar, New York

MEMBER PRESTRESSED CONCRETE INSTITUTE

PHOENIX BRIDGE COMPANY

Engineers—Fabricators

Erectors

Structural Steel

BRIDGES and BUILDINGS

AISC

General Office and Shops

PHOENIXVILLE, PA.

Subsidiary—Phoenix Steel Corporation

DO WE HAVE YOUR COMPLETE ADDRESS?

Not unless you included your postal zone number when moving, subscribing or renewing subscriptions.

new president joined the company in 1949 and has been an officer and director since 1954.

Philip T. Coffin has been appointed general manager of the newly created structural division of the Aluminum Co. of America. Since 1955 he has been manager of electrical industry sales and before that, manager of electrical conductor sales.

James C. Tourek has been named vice president for engineering of Vitro Engineering Co., New York City. He succeeds **Sidney M. Stoller** who has become an engineering consultant for the firm. Mr. Tourek has been with Vitro since 1935 and is responsible for the engineering and construction of the company's nuclear, refinery, chemical and missile industries in the U. S. and abroad.

Malcolm J. Chase takes over as vice president of the Davidson Construction Co., Manchester, N. H. He recently resigned his post as highway design engineer with the New Hampshire State Highway Department where he served since 1932. He was the department's first location engineer and later became turnpike engineer.

Public Works

Charles E. Hatch of Hatch, Samborn, Steketee and Associates, Toledo consulting engineers, has been named to the Professional Engineers and Surveyors Board. Mr. Hatch has been planning engineer for both the city of Toledo and Lucas County.

John P. Swain has been appointed head of the secondary roads division of the North Carolina Highway Department. He replaces **Harold Makepeace,** who has resigned to become private secretary to Governor Luther H. Hodges.

New members of Ohio's Water Commission are **John A. Slipher** of Columbus, **George E. Miller** of Piqua, **Wendell R. LaDue** of Akron and **Bryce Browning** of New Philadelphia.

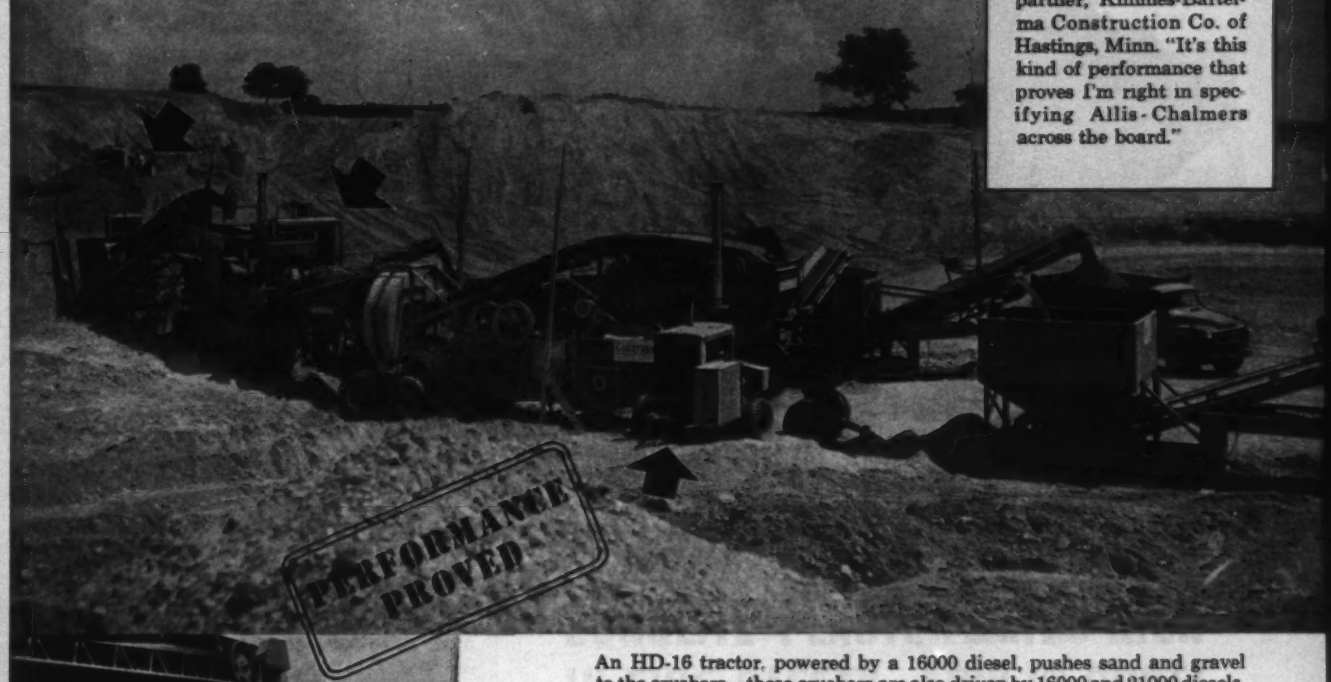
William A. Carleton and **William J. Muehlenbeck Jr.** are the new members of the Michigan State Highway Department Industry Advisory Committee. Mr. Carleton is State Sales Manager of Armco Drainage and Metal Products, Inc. Mr. Muehlenbeck is owner of the William J. Muehlenbeck Excavating Co., Saginaw.

John J. Vertress is project construction engineer for the Yakima Washington reclamation project. He replaces **Edward C. Keeler** who is assistant superintendent on construction phases for the project.

Percy Nixon has been named city engineer at Clarkston, Wash. Mr.

"Our 16000 and 21000 diesels have plenty of reserve power, with economy and dependability to boot,"

says S. T. Kimmes, partner, Kimmes-Bartelma Construction Co. of Hastings, Minn. "It's this kind of performance that proves I'm right in specifying Allis-Chalmers across the board."



An HD-16 tractor, powered by a 16000 diesel, pushes sand and gravel to the crushers—these crushers are also driven by 16000 and 21000 diesels.

A 16000 diesel powers this hopper at the pug mill.

21000 — 340 hp
(turbocharged)
16000 — 230 hp

Supplying and placing more than a million tons of subbase material for runways at a new midwestern Air Force base is typical of the jobs handled by the Kimmes-Bartelma Construction Co., Hastings, Minnesota.

Kimmes' aggregate plant shown above turned out 8,000 tons per day. These Allis-Chalmers 16000 and 21000 engines logged over 1,500 hours in three months. The only downtime on this job was due to wet weather.

Why is Kimmes' operation Allis-Chalmers-powered all the way? Because as he puts it: "These engines are in there giving us real performance day in and day out with no strain — in the tractors, on the crushers, and at the pug mill." They deliver the power and torque they are supposed to without overworking. The completely new Allis-Chalmers open-chamber combustion system makes the 16000 and 21000 the most economical, cleanest-running, fastest-starting diesels in their class.

Let your Allis-Chalmers dealer tell you more. Let him refer you to users — find out what they think of these "Performance-Proved" engines. Allis-Chalmers, Milwaukee 1, Wisconsin.

ALLIS-CHALMERS

POWER FOR A GROWING WORLD

Allis-Chalmers Selects Twin Disc Torque Converter for TL-14's Tractomatic Transmission

EIGHTEEN YEARS AGO Allis-Chalmers introduced the first torque converter drive in a crawler tractor. That original unit featured a Twin Disc converter, and the same is true of many present-day Allis-Chalmers construction machines. For the optional Tractomatic Transmission in the new TL-14 Tractoloader, Allis-Chalmers engineers have once again incorporated a Twin Disc Torque Converter.

This transmission provides the key advantage of power shifting in a simpler, more economical unit. A direction control lever on the steering column actuates forward and reverse clutches hydraulically — changes directions without clutching, shifting gears, or stopping the machine.

Since reverse speeds are 30% faster than forward, reversing the machine automatically increases its speed. This eliminates the usual necessity of shifting gears manually to achieve the same effect.

The Tractomatic transmission has four speeds in both forward and reverse. On short haul loading and stockpiling jobs, it is seldom if ever necessary to change speeds once the proper ratio is selected.

A Twin Disc Single-Stage Torque Converter is an integral part of this transmission. Besides increasing torque automatically as needed, the converter permits rapid clutch engagement and absorbs the shock of the shift in its whirling fluid.

A test of the TL-14 Tractoloader at your Allis-Chalmers dealer will demonstrate why so many of America's leading earth-moving equipment manufacturers are standardizing on Twin Disc Torque Converter Drive.

TWIN DISC

TWIN DISC
Torque Converters

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • Hydraulic Division, Rockford, Illinois

Nixon, now city engineer of Demopolis, Ala., succeeds **Eugene Asseltine,** who resigned to join the state pollution department at Yakima, Wash.

Konstantine L. Kollar is now assistant director of the Water and Sewage Industry and Utilities Division of the Department of Commerce. Before joining the division, Mr. Kollar was a sanitary engineer consultant with the International Cooperation Administration in Mexico, Ecuador and Venezuela.

Eugene V. Avery, assistant St. Paul city engineer, has been promoted to chief engineer. Before coming to St. Paul in 1953 he was with the city of Berkeley, Calif, and the U. S. Bureau of Public Roads. Succeeding him as assistant city engineer is Richard L. Wheeler. He has been maintenance engineer for St. Paul for the past two years.

Brig. Gen. Louis H. Foote, retired North Pacific Division Engineer, U. S. Army Engineers, has been appointed a member of the Oregon Water Resources Board.

Lester A. Herr, has been transferred to the Bureau of Public Roads Washington office as chief of the hydraulic and hydrological branch in the Office of Engineering. He has been regional hydraulic engineer in the north-west region.

E. L. White has been named assistant regional project development engineer with the Bureau of Reclamation's regional office at Boise. He has been area engineer in charge of general investigations in the Snake river basin. Replacing him on the Snake river project is **M. B. Austin** who has been promoted to assistant regional director.

Jack M. Graham has been appointed public works director for Corpus Christi, Texas, after serving seven years as assistant public works director in Dallas.

John C. Haberer has been appointed assistant director of Sanitary Engineering in the State Health Department's Bureau of Environmental Sanitation. Salary: $11,734. In 1956 he was named associate sanitary engineer in the sewage and wastes section of the bureau in Albany. He remained there until his present promotion.

Russell J. Cooney, city manager of Merced, California, has been named California Deputy Director of Public Works for Management. Before coming to Merced eight years ago, Mr. Cooney was personnel director at Pasadena and in San Mateo County.

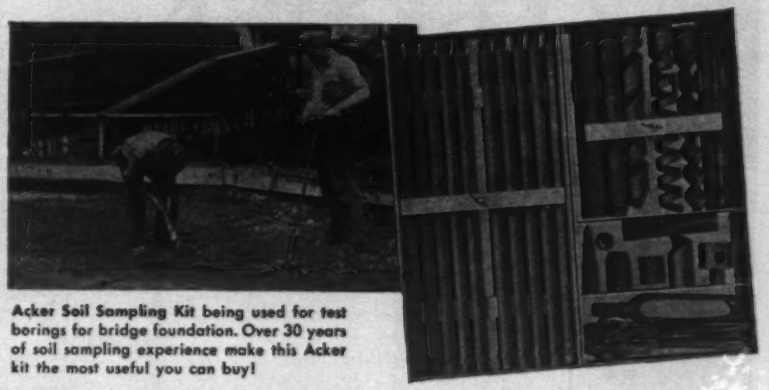
Donald S. Walter, retired engineer for the Bureau of Reclamation, joins the Denver Water Board as resident engineer for construction of the Dillion Dam and Reservoir.

DON'T GUESS!

use an ACKER SOIL SAMPLING KIT for accurate sub-surface information

With accurate sub-soil information, you avoid costly trouble later on. And, what better way to get this information than with a portable, easy to use Acker Soil Sampling Kit. For here is a versatile collection of twelve soil sampling tools packed in a handy steel kit that can be carried in any car.

Write today for prices and Bulletin 26ENR.



Acker Soil Sampling Kit being used for test borings for bridge foundation. Over 30 years of soil sampling experience make this Acker kit the most useful you can buy!

ACKER DRILL CO., Inc. 725 W. Lackawanna Avenue Scranton, Penna.

a complete line of Diamond and Shot Core Drills, Drilling Accessories and Equipment

IN DETROIT, TOO...

ZONOLITE® PLASTER RATES HIGH IN FIRE-SAFETY...LOW IN COST!

LEFT: National Bank of Detroit's new main office has all columns and ceilings fireproofed with ZONOLITE plaster. Arch. and Engineers: Albert Kahn Associated Architects and Engineers, Inc.; Gen. Contr.: Bryant & Detwiler Co.; Plastering Contractor: McNulty Bros. Company.

BELOW: ZONOLITE plaster is used on ceilings in Detroit's new Cobo Hall Exhibit Building. Area equals several football fields. Arch.: Giffels & Rossetti; Gen. Contr.: O. W. Burke Co.; Plastering Contractor: Berti Plastering Company.

One application both plasters and fireproofs

Plaster using Zonolite vermiculite aggregate, which costs little more than sand plaster, substantially reduces other building costs. Only ⅓ the weight of sand plaster, it is easier to handle, goes on faster, frequently permits lighter structural members with proportionate savings. Earns highest fireproofing ratings, often reducing insurance costs. Many other advantages. Send today for folder PA41.

FREE DATA FOLDER...MAIL COUPON

ZONOLITE COMPANY...Dept. ENR-10
135 South LaSalle St., Chicago 3, Ill.
Please mail me data folder PA41.

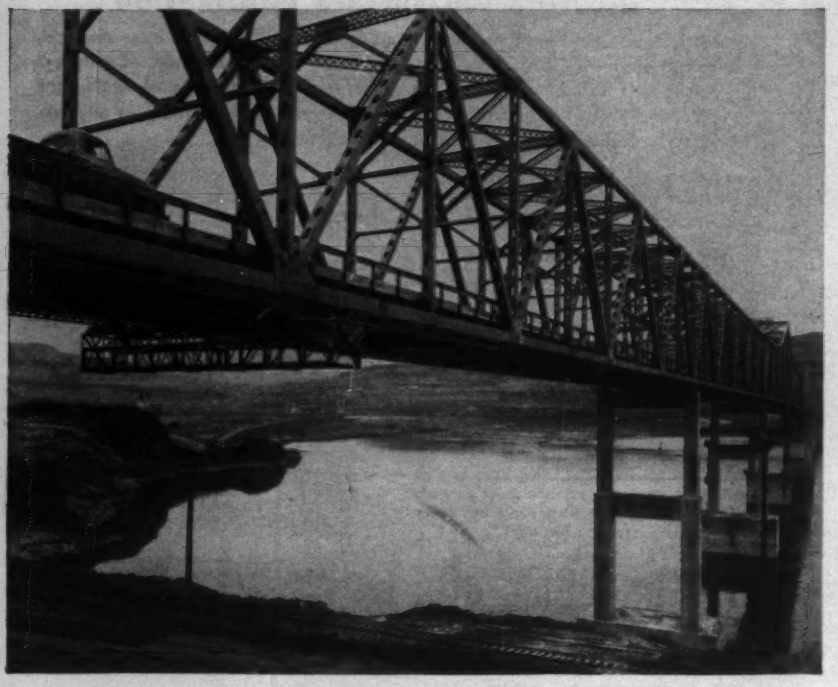
Name_____
Firm_____
Address_____
City & Zone_____ State_____

Tramrail CUTS Bridge Building Costs

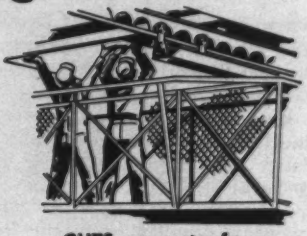
1. SAVES
Construction Time

2. SPEEDS
Inspection and Painting

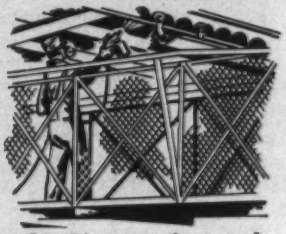
3. SIMPLIFIES
Maintenance



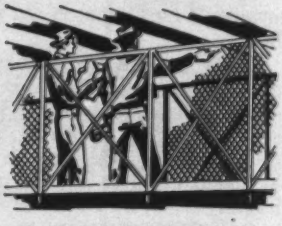
Dalles Bridge over Columbia River between Washington and Oregon. Equipped with a Cleveland Tramrail System including six traveling service platforms operating between piers. The platforms are 36'-6" long and extend beyond the bridge sides.



CUTS concrete form erection time.



SAVES many hours of painting time.



MAKES bridge inspection a simple, easy job.

A CLEVELAND Tramrail Bridge Servicing System can effect such large savings in bridge construction that no bridge builder can afford to overlook this latest development.

The Tramrail installation on the Dalles Bridge over the Columbia River is a good example of this. The equipment was included in the original design. By erecting it in the early stages of construction, the bridge builder was able to pay himself a handsome "bonus" resulting from the efficiency that it brought about.

The equipment made possible savings in several ways. It drastically reduced man-hours required for setting bridge deck forms prior to pouring the concrete. It speeded assembly of many structural members. It simplified placing of electric conduits. It aided bridge inspection and saved a large amount of painting time.

The Tramrail continues to be an important cost-reducing and safety factor now that the bridge is completed. Periodical inspections can be made easily and quickly. Any maintenance underneath can readily be taken care of. Painting and sandblast equipment can be stored on the service platform, making the work easier and, of course, less costly.

Cleveland Tramrail engineers in the principal cities in the U.S.A. and Canada stand ready to serve you.

GET THIS BOOK!

BOOKLET No. 2008. Packed with valuable information. Profusely illustrated. Write for free copy.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
3187 EAST 284 STREET, WICKLIFFE, OHIO

CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

Obituaries

Forrest S. Harvey Dies; Headed Wartime Committee

Forrest S. Harvey, 74, retired chairman of the Construction Advisory Board for the War Department is dead. As chairman, he was in charge of selecting architects, engineers and contractors for World War II projects.

He began his career in 1906 in the engineering department of the Chicago Terminal Transfer Railroad. In 1922 he joined the U. G. I. Contracting Co. as construction engineer at Philadelphia. He supervised the construction of steam power plants, bridges, piers, locks, dams and chemical plants. He directed the construction of Port Hueneme, Calif. from 1935 to 1940.

Charles E. McKee, 64, executive secretary of the Ohio Contractors Association for 12 years. Before joining the association, he worked for the Ohio State Highway Department as division engineer, chief engineer of maintenance and chief engineer of location and design. In 1949 Mr. McKee was appointed to the Ohio Highway Study Committee to survey the state's highway needs.

Charles T. Hiddlebrook, 91, design and consulting engineer in Albany, New York. He specialized in structural steel, reinforced concrete and in hydroelectric power development. He was also a consulting engineer for the Delaware & Hudson Railroad.

Otto Buehner, 59, president of the Otto Buehner Co., Salt Lake City, and the Buehner Co., Mesa, Ariz. His company did the facing on the Denver Hilton Hotel.

Floyd M. Roush, 63, regional irrigation supervisor for the Bureau of Reclamation. He was a staff officer in the Wyoming state engineer's office from 1929 to 1936 and then served as Wyoming state engineer from 1936 to 1937. In 1940 he joined the Bureau of Reclamation and was promoted to his last job in November, 1959.

Webster J. Caye, Sr., 75, chairman and former president of the Caye Construction Co. His last project was the construction of the grandstand at the Aqeduct race track, New York City.

Alexander B. McEachern, 50, and **Richard W. Jones,** 53, president and executive vice president respectively of the General Construction Co., Seattle, in a plane accident.

Arthur Perry, 86, former chief engineer of the New York City Department of Public Works. He worked on the designs for the Manhattan Bridge and the reconstruction of the Brooklyn Bridge. He also helped in designing the West Side Elevated Highway and the Triborough Bridge. He retired from the city department in 1938.

Charles Tilden, 86, professor emeritus of engineering mechanics at Yale University. Born in Brookline, Mass., he graduated from Harvard and received an honorary master's degree from Yale. Before coming to Yale in 1919, he taught engineering at Cornell, the University of Michigan and Johns Hopkins. From 1922 to 1942 he was a highway research specialist with the Bureau of Public Roads. He retired from teaching in 1940.

Frank P. Fifer, 74, engineer with the Tudor Engineering Co., Washington, D. C. since 1956. He had also been with Hugh L. Cooper & Co., New York City where he was in charge of construction on the Wilson Dam and the Dnieprostroy hydroelectric development in Russia.

Clyde T. Bennett, 55, retired owner of the Bennett Brick and Tile Co., Kings Mountain, N. C.

B. O. Etling, 81, president of the Etling Lumber Co., Barberton, Ohio, and cofounder of Weather Seal, Inc. He also established the Duopan Co., an insulated glass manufacturing firm.

H. Henry Gellert, 70, retired president of the Seattle Gas Co. He began his engineering career with the American Gas Co. in 1910 and worked for utility companies in the East and Midwest until his retirement in 1955.

Earl D. Rieck, 63, project engineer for the Army Engineer at Fort Lawton, Wash.

Orie C. Smith, 43, president of Curly Construction Co., Inc., Rochelle Park, N. J. He had been supervising the Blackstone Flood Project at Worcester, Mass.

Samuel Nelson, 60, chief engineer and assistant general manager of the Palisades Interstate Park. He was with the Commission since 1941 and directed the design of the Palisades Interstate Parkway in New York and New Jersey. He also served with the Westchester County Park Commission and the Long Island State Park Commission.

New book tells

Where . . .

How . . .

to place reinforcing bars

Written for bar setters and inspectors . . . as a manual for apprentice courses . . . and a reference for specification writers, architects, engineers, and detailers.

Contains complete specifications and instructions for placing reinforcing bars, welded wire fabric, and their supports.

Prepared under the direction of the C.R.S.I. Committee on Engineering Practice.

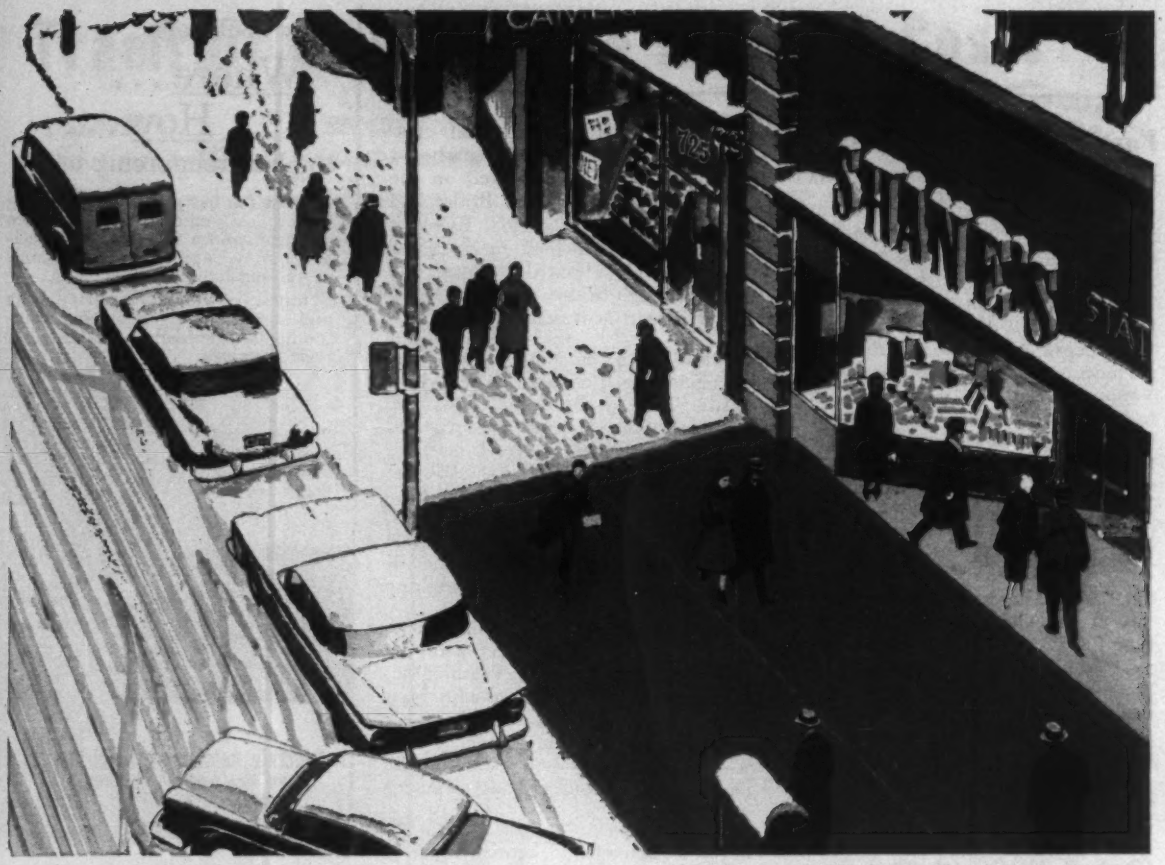
287 PAGES—6" x 9"
HANDY POCKET SIZE
$3.00
No C.O.D. orders accepted
Refund if returned within 10 days

Concrete Reinforcing Steel Institute
38 South Dearborn Street (Dept. L)
Chicago 3, Illinois

WATER WORRIES?

Dewatering equipment, wellpoints, pumping systems and service from the John W.

STANG *Corporation can fix 'em. Los Angeles • Omaha • Mobile • Tacoma*



steel pipe snow melting systems pull customers in, provide walking safety, eliminate sidewalk maintenance

Today's store traffic competition is keen. That's why modern retailers are so aware of their "exterior image." The sales impressions their fronts and window displays create often mean the difference between profit and loss.

One of the most dramatic, effective and low-cost ways that you can provide the organizations you serve with "added sales extra" is to recommend *steel pipe* snow melting systems. Thousands of business places have tested and proved the magnetic attraction that automatic snow melting gives. Pavements clear of snow and ice draw customers in . . . and it's the kind of service that creates the very best image to customers, prospects and the community alike.

Sturdy, durable *steel pipe is first choice* for automatic snow melting, with reason. It is economical, easy to work, simple to install. The same advantages make *steel pipe first choice* for fire sprinkler systems, conduit, vent and drainage lines, structural uses, radiant heating, refrigeration and gas, air and water transmission. Next time, make it *steel pipe.*

Illustration from booklet "Snow Melting and Ice Removal" shows steps in a sidewalk installation. For details on snow melting systems, write for this 32-page booklet.

STEEL PIPE IS FIRST CHOICE

- Low cost with durability
- Strength unexcelled for safety
- Formable—bends readily
- Weldable—easily, strongly
- Threads smoothly, cleanly
- Sound joints, welded or coupled
- Grades, finishes for all purposes
- Available everywhere from stock

INSIST ON PIPE MADE IN U.S.A.

COMMITTEE ON STEEL PIPE RESEARCH

150 East Forty-Second Street, New York 17, N.Y.

Titan Units to Cost $31.6 Million

All eight competing bidders on the Titan ICBM technical facilities at three complexes near the Larson Air Force Base, Moses Lake, Wash., elected to bid on a combination of the three complexes rather than to submit separate bids for each complex. The Corps of Engineers, Walla Walla, Wash., had provided for the two alternates in bidding.

Much of the bidding is lump sum or on complex units, since this multiple military defense project cannot be reduced to dimensioned size. The Air Force Ballistic Missile Division, Los Angeles, is the engineer.

MacDonald, Scott & Asso., St. Louis, Mo., a joint venture of MacDonald Construction Co., St. Louis; Scott Co., Oakland, Calif.; C. H. Leavell & Co., El Paso, Tex.; Morrison-Knudsen Co., Los Angeles; Paul Hardeman, Inc., Stanton, Calif.; and F. E. Young Construction Co., San Diego, Calif., was successful bidder at $31,600,722.

The award was 3% below the engineers estimate, 1.6% under the $32,113,526 second low bid of George Fuller Co., Los Angeles, and less than 6% under the $33,479,077 third low bid of Peter Kiewit Sons' Co. Six of the eight bidders were joint ventures, only Fuller and Kiewit bidding individually.

Especially close tolerances and completion time will create some difficulties for the contractor. The work commenced Nov. 21 and will be completed in increments, the final increment scheduled for April 30, 1962. Liquidated damages range from $100 to $1,000 a day.

The contractor furnishes all materials except some special equipment. Both highway and rail transportation can be used. The railroad is 4 to 25 miles from the various sites.

Wages include: carpenter $3.32; cement mason $3.32; electrician $3.70; structural ironworker $3.59; crane, derrick, dragline & power shovel operators $3.65-$3.90; general laborer $2.60.

The bidding on these ICBM projects included:

1C	MacDonald, Scott & Asso., St. Louis Mo.	$31,600,722a
2	Geo. A. Fuller Co., Los Angeles, Calif.	32,113,526
8	Raber-Kief, Inc., Seattle	39,196,063b
EE	Corps of Engineers, Walla Walla, Wash.	32,521,416

a A joint venture consisting of MacDonald Constr. Co., St. Louis, Mo.; Scott Co., Oakland, Calif.; C. H. Leavell & Co., El Paso, Tex.; Morrison-Knudsen Co., Inc., Los Angeles, Calif.; Paul Hardeman, Inc., Stanton, Calif.; F. E. Young Constr. Co., San Dego, Calif.

b A joint venture consisting of The Steel Constr. Co. of Oregon, Portland; Massart, Inc., Seattle; Wash.; Kehne Elec. Co., Inc., St. Paul, Minn.; Cherf Bros. & Sandkay, Inc. Ephrata, Wash; H Halversen, Inc., Spokane, Wash.; Commonwealth Elec. Co., Lincoln, Neb.; Sandkay Inc., Ephrata, Wash.

Bids: 11-18-59 Items	Unit	Quantity	Unit Prices 1C	2
Missile silo	ea	9	$818,000	$1,714,426
Equipment terminal	ea	9	428,000	200,000
Propellant terminal	ea	9	442,000	400,000
Control center	ea	3	610,000	300,000
Antenna silo pairs & terminals	ea	3	371,000	200,000
Purhse compl w air intake & exhaust structs, connecting duct & tunnel juncts #11 & 13, with fuel storage tanks	ea	3	2,624,000	1,400,000
Entry portal silo	ea	3	333,000	250,000
Launcher area air filtration structure	ea	3	71,400	100,000
Stl tunnels (3 complexes) personnel	ls	job	2,001,000	1,240,000
utility	ls	job	137,000	180,000
PLS inter connecting tunnels compl with offset tunnels, to missile silos & exhaust tunn structure	ls	job	1,112,000	750,000
ventilation to blast locks #1 & 2	ls	job	79,000	120,000
Tunnel juncts #1, 2, 4, 5 & 7 (3 each)	ls	job	653,000	375,000
#8 & 9 (3 each)	ls	job	200,000	150,000
#10 (3 each)	ls	job	435,000	120,000
#12 (3 each)	ls	job	233,000	120,000
Blast lock #1	ea	3	141,000	150,000
#2	ea	3	100,000	125,000
Orientation targets (3 complexes)	ls	job	8,531	15,000
Water distri systems	ea	3	5,246	5,000
Waste systems: force main sewer pipe	lf	425	6.00	5.00
8" vlvs (2 per complex)	ls	job	800.00	2,500
sewage treat plant & percolation	ea	3	7,054	7,000
Drainage structures: seal chamber	ea	15	733.00	1,000
sludge settling basin	ea	3	4,298	500.00
Exterior electrical: hazard alerting lights, receptacles, tel MH, undergr feeder & conduits (3 complexes)	ls	job	39,000	50,000
Grading, roads & paved areas: exc & subgrade preparation	cy	7,820	$0.75	$0.75
embankment	cy	55,710	0.80	1.00
stab aggr base crse & surf crse	cy	12,810	5.00	5.10
prime coat	gal	12,900	0.40	0.40
bituminous surf course	t	4,670	14.00	14.00
concrete paving	cy	330	35.00	25.75
concrete pipe, 18"	lf	557	6.00	5.50
flared end sections	ea	5	100.00	30.00
riprap	cy	15	25.00	20.00
guide & grd posts, culv markers, wheel bumpers parking area striping, bronze crane markers (for 3 complexes)	ls	job	1,000	2,500
Soil stabilization	ac	48.6	1,100	1,025
Secur fencing, motorized gates (3 complexes)	ls	job	63,000	80,000
Secur lig sys & supply transformers (3 complexes)	ls	job	89,000	75,000
Storage base segregated magazine	ea	3	4,086	3,000
Shtg & bracing left in pl lumber	bf	300	10.00	0.50
metal	sf	300	10.00	3.00
Communications antenna silo	ls	job	6,377	12,000
Waterwell: mobilize & demobilize equipment	ls	job	35,000	35,000
casing & liners	lb	25,400	0.30	0.50
drilling	lf	500	45.00	50.00
drill-out cmt plugs	lf	150	6.00	7.00
casing & liners, perf.	lf	300	8.00	9.00
develop well	hr	48	20.00	25.00
test pump installation, max lift 600 ft	ea	2	1,800	2,000
850 ft	ea	1	3,200	3,500
pumping test	hr	218	25.00	27.50
standby charge	day	30	20.00	110.00
alignment survey	ea	3	140.00	155.00

f & i Furnish & instal

Commence: 11-21-59. To be completed in increments; last increment 4-30-62. Liq. dam. $100 to $1,000/day, by increments of work.

Tennessee Bridge Award Won on Roadway Items

Contract for this concrete deck girder bridge and approaches over Roan Creek in Johnson County, Tenn., for the state highway department, went to Oman Construction Co., Nashville, at $55,056. The award was 4% over the engineer's estimate. R. L. Iddins is division engineer of department at Knoxville.

The contract breaks down like this:

Work	Amount	% of Total
Bridge items	$32,367	59
Roadway items	22,689	41
Total	$55,056	100%

Oman's bid on bridge items was 13% higher than that of his nearest competitor for the contract, Simpson Construction Co., Cleveland, Tenn., but his low bid on roadway items, 16% under Simpson's, gave him the 1% advantage needed to take the contract.

Bridge length is 142.5 ft, and roadway width is 24 ft. The five 26-ft clear spans will be skewed at 90°.

Class A concrete must attain a compressive strength of 3,000 psi.

The contractor must furnish all materials.

Rail and truck transportation is available, but the railroad is approximately 32 miles from the site of the project.

Minimum wages include: carpenter $2.55; bulldozer operator $2.35; shovel, backhoe operator, $2.65; crane & derrick operators, $2.65; common laborer, $1.35.

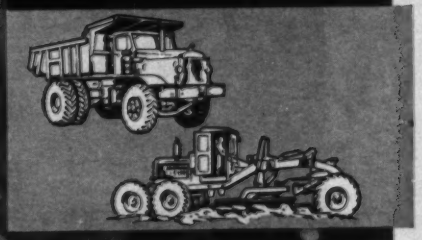
The seven bids on this skewed bridge included:

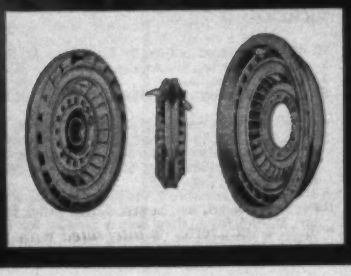
1C	Oman Constr. Co., Inc., Nashville, Tenn	$55,056
2	Simpson Constr. Co., Cleveland, Tenn	55,601
7	Clinchfield Conc Co., Inc., Kingsport, Tenn	57,691
EE	R. L. Iddins, Div. Engr., State Hwy Dept	52,947

Bids: 10-30-59 Items	Unit	Quantity	Unit Prices 1C	2
Roadway Items				
Clear & grub	ls	job	$1,050	$1,300
Excavation, uncl, rd & dr	cy	535	0.58	0.80
channel	cy	7,965	0.58	0.85
Water, embank & traf bd rdwy	Mgal	90	3.15	3.00
Borrow exc, solid rock	cy	200	3.15	4.00
uncl	cy	3,900	0.63	0.80
Cr stone, traf bound roadway	t	2,857	2.95	3.25
Gran bkfl, pipe & p arch culv	cy	68	3.05	3.50
Bit matl, prime coat	t	7	49.00	42.00
hot bit seal coat	t	6	44.00	42.00
Min aggr, hot bit seal coat	t	86	3.85	3.50
Bit matl, a bit surf treat	t	7	44.00	42.00
Min aggr, a bit surf treat	t	80	3.85	3.50
Conc pipe culv, 30"	lf	56	9.00	12.50
60"	lf	78	29.00	29.00
CMP culv, 15", side drains	lf	120	3.40	3.75
24", side drains	lf	32	6.25	6.50
Markers, rt of way posts	ea	26	7.35	7.50
Bridge Items				
Structs, obstructs, etc remov	ls	job	500.00	500.00
Steel, structural	lb	3,000	35.00	40.00
bar reinforcing	lb	43,257	0.14	0.13
piles, 10" at 42°	lf	940	7.50	7.00
Concrete, class A	cy	197.4	69.50	65.00
Riprap	cy	158	30.00	16.00

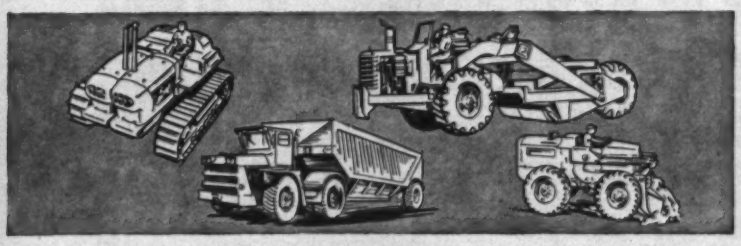
Completion schedule: 100 working days
Liquidated damages: $40 day

What's it costing





you to keep the "stick"



EVEN IF YOU HAVE only top operators on all your equipment, the cost of keeping a stick-shift comes to a pretty penny: too-frequent, high repair bills for unavoidably shock-loaded drive lines and axles—engines being overhauled twice as often as necessary at $1,200 to $1,500 per overhaul—and, of course, those incessant clutch repairs and replacements.

No Operator Matches TORQMATIC Efficiency—

—for no operator can handle the stick as smoothly and efficiently—*every* time—as an Allison TORQMATIC DRIVE.

TORQMATIC adjusts your engine output and speed—automatically—to meet every change in load or terrain. It never fatigues—no matter how long or how tough the job. It needs no costly training—in fact, TORQMATIC owners report they're saving between $1,500 and $2,000 every time they train a driver because rookies can't make a shifting or clutching mistake.

It's Working for You or Against You

So it's easy to see that a TORQMATIC DRIVE is a real money saver. One thing is sure: you're either cashing in on its advantages on every job you bid for—or competing against men who do, who bought TORQMATIC because they looked at *total* cost, not just *first* cost.

And remember—TORQMATIC is available in almost every type—and well over 100 makes—of equipment. It's been proved—on years of tough jobs—far beyond any other hydraulic transmission. Just see your dealer—or write Allison for details.

ALLISON DIVISION OF GENERAL MOTORS
Indianapolis 6, Indiana

In Canada: General Motors Diesel Ltd., London, Ontario

Allison TORQMATIC

TORQMATIC® DRIVES

THE MODERN DRIVE FOR MODERN EQUIPMENT

Built stronger to last longer—Allison casts its converter for extra strength, greater precision—and the converter is *integrated* with the transmission for a neat, easily serviced installation.

Materials Prices

Monthly Market Quotations by ENR Field Reporters

IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES—	PLATE CARBON STEEL	REINF BARS* billet	RIVETS ½-in. structural	SHEET PILING Base	STEEL RAILS Per Net Ton Standard	STEEL RAILS Per Net Ton Light	TRACK SUPPLIES Angle Bars	TRACK SUPPLIES Std Spikes	TRACK SUPPLIES Tie Plates	TRACK SUPPLIES Track Bolts
Birmingham Area	$5.50	$5.30	$5.675	$12.25	.....	$110.00	$130.00	$6.975	$9.75	$6.60	.....
Chicago Area	5.50	5.30	5.675	12.25	$6.50	110.00	130.00	6.975	9.75	6.60	.....
Pittsburgh Area	5.50	5.30	5.675	12.25	6.50	110.00	130.00	6.975	9.75	6.60	$14.75
Buffalo Area	5.50	5.30	5.675	12.25	6.50	110.00	130.00	6.975	9.75	6.60	14.75
Cleveland	.....	.....	5.675	12.25	6.50	.....	.....	.....	.....	.....	14.75
Youngstown Area	.....	.....	5.675	.....	.....	.....	.....	.....	9.75	.....	.....
Geneva	5.50	5.30	.....	.....	.....	.....	.....	.....	.....	.....	.....
Los Angeles	6.30	.....	6.375	.....	6.50	.....	.....	.....	9.75	6.875	.....
Pueblo	.....	.....	.....	.....	.....	.....	.....	60.75	9.75	6.60	.....

* Fairless Works, $5.675.

IRON AND STEEL PRODUCTS—F.O.B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	STRUCTURAL SHAPES Extras, New York:	REINFORCING BARS Per 100 lb., base price 5 tons to carload lot New billet	REINFORCING BARS Rail steel	REINFORCING BARS Extras, New York:	EXPANDED METAL LATH Per 100 sq. yd., carload lots Std. diamond mesh, 3.4 lb.	EXPANDED METAL LATH Std. ribbed 3.4 lb.	WELDED FABRIC REINFORCING Per 100 sq ft., carload lots fob mill
Atlanta	$9.40		8.75	$8.75		$53.00S	$57.00S	
Baltimore	9.70		9.00T	.....		44.50	49.00	
Birmingham	9.00ty		8.99ty	8.99ty		61.00pK	67.00pK	
Boston	9.12K		8.75t	8.75t		49.50K	54.00K	
Chicago	9.15u		7.15gu	7.15gu		52.00‡U	63.00‡U	
Cincinnati	9.50ukt		9.04‡t	.....		44.50Kg	49.00mnKg	
Cleveland	8.20wt		7.14ct	.....		46.50KL	51.00KL	
Dallas	10.45M		9.00	9.00		44.00u	48.50w	
Denver	10.15rK		9.25c	.....		63.00n	69.00n	
Detroit	9.25RM		7.37Q	11.85Q		55.00O	63.00O	
Kansas City	9.85zT		8.10N	.....		49 00	60.00	
Los Angeles	8.90dlz		7.35frt	.....		55.00S	64.00S	
Minneapolis	.....		9.26T	9.26T		44.50K	49.00K	
Montreal	7.90-8.50NCF/8.20-8.90AiF		7.00/7.50PGi	7.00/7.50PGi		65.70A	70.20A	
New Orleans	.....		8.00pkz	.....		48.50K	53.50K	
New York	9.84‡s		8.60ty	8.60y		52.00n	59.00ns	
Philadelphia	9.100u		8.23u	.....		44.50‡U	55.20‡U	
Pittsburgh	9.00y		7.35y	.....		58.50‡rw	64.50‡rw	
St. Louis	9.48stz		7.75‡zQ	7.75‡zQ		61.00wzK	67.00wzK	
San Francisco	10.80aS		9.85jS	.....		53.00S	58.00S	
Seattle	10.20aD		8.85DM	.....		67.00‡xD	73.50‡xD	
Toronto	9.20H		7.85	7.85		48.10pqJ	53.10pqJ	

EXTRAS, per cwt: Quantity (applies to LCL shipments only): under 1,000#, +$1.50; 1000-1999#, +$1.30; 2000-4999#, +$1.10; 5000-9999#, +30¢; 10,000-19,999#, +20¢; 20,000-29,999#, +10¢; 30,000-39,999#, +5¢; 40,000 & up, zero. Size: #2 & #3, +$2.50; #4 +$1.50; #5 +75¢; #6, #7, #8, +50¢; #9, #10, #11 +30¢. Bending: base#, +40¢; light rail or Bessemer rail, +60¢; #5 +75¢; #6 +$1.00; #7 +$1.50; #8 +$2.00; #9 +$2.50; #10 +$3.00; #11 +$3.50. Extras, New York: (except in New York City and surrounding metropolitan area where handling must be done on the job). Requirements: (details and size) 2000-4999#, +40¢ per 100 lbs.; 5000-9999#, +30¢; 10,000-19,999#, +20¢; 20,000-29,999#, +10¢; 30,000-39,999#, +5¢; 40,000 lbs. & over

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, MARIE MORAVSIK, ELAINE CHOMYAK, ELIZABETH WERRA, ELEANOR QUERET, Reports, J. H. WEBBER, E. R. HUBER, Statistics.

NEW ENGLAND

BUILDINGS—BA

▲† **N. H., Hanover**—LABORATORY—BA 1/19—U. S. Eng., 424 Trapelo Rd., Waltham, Mass., Cold Regions Research and Engineering Laboratory, ENG-19-016-60-37, $2,000,000-$3,000,000. Extended date. Burns & Roe, Inc., 160 W. Broadway, New York, N. Y., archt. CD 12/28.

Mass., Swampscott—HOUSING FOR THE ELDERLY—BA 1/26—Town Housing Auth., P. Wks. Dpt., Town Hall, housing for the elderly, $400,000. Plans deposit $100. John J. Maloney Assoc., 61 Jefferson Ave., Salem, Mass., archts. CD 5/13.

Mass., Amherst—COLD STORAGE LABORATORY—BA 2/5—Commonwealth of Mass., Dpt. Education, c/o Div. Bldg. Constr. 38 Chauncy St., Boston, Mass., U-58-6 Contr. 1, cold storage laboratory, University of Massachusetts, $490,000. Plans deposit $40. S. S. Eisenberg, 739 Boylston St., Boston, archt.

HEAVY CONSTRUCTION—LB & CA

▲ **VERMONT**—State Dpt., Hys., State House, Montpelier,

S. V. Rossi Constr. Co., Inc., 49 McDermott Ave., Torrington, Conn., CA $1,055,062, est. $1,000,000, road work, Rte. 7, F. 019-1 (1) Pownal Co. Bids Dec. 18. CD 12/23, under LB.

MASSACHUSETTS — Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Bids opened 12/29,

Callan Constr. Corp., 539 Hope St., Bristol, R. I., LB $929,497, est. $1,077,495, hy. and bridge constr., connect Rte. 6 to Horseneck Beach, S. 114 (4) Westport. CD 12/15.

▲† **Fontaine Brothers, Inc.**, 40 Hendrick St., Chicopee Falls, Mass., LB $1,078,810, Air National Guard facilities, Barnes Airport, ENG-19-16-60-20, WESTFIELD, MASS. U. S. Eng., 424 Trapelo Rd., Waltham, Mass. Bids Dec. 30. CD 12/14.

BUILDINGS—LB & CA

▲ **Aberthaw Constr. Co.**, 60 State St., Boston, Mass., CA Approx. $1,000,000, "Charterhouse Inn" MOTOR HOTEL and RESTAURANT, South Shore Plaza, Rtes. 37 and 128, BRAINTREE, MASS. Shopping Centers Investment Trust, c/o Federated Stores, Inc., 121 W. 27th St., New York, N. Y. Curtin & Davis, 2475 Canal St., New Orleans, La., archts. CD 3/23.

▲ **Aberthaw Constr. Co.**, 60 State St., Boston, Mass., CA Approx. $15,000,000, INDUSTRIAL RESEARCH CENTER, site former Lever Bros. Property and Rogers Block to be built 4 stages totalling 1,000,000 sq. ft., 1st two bldgs. to contain 305,000 sq. ft., CAMBRIDGE, MASS. Mass. Institute of Technology, 77 Massachusetts Ave., Cambridge, Mass., and Cabot, Cabot & Forbes Co., 60 State St., Boston, Mass. Cabot, Cabot & Forbes Co., Engineering Div., 60 State St., Boston, Mass., engr.

A. R. Green & Son, 19 St. James Ave., Holyoke, Mass., CA $450,000, MANUFACTURING PLANT, Canal St., SOUTH HADLEY, MASS. Nonotuck Mfg. Co., Water St., Holyoke, Mass. Bids Nov. 19. CD 11/10.

▲ **I. R. Stich Assocs., Inc.**, 611 New Park Ave., West Hartford, Conn., Owner Builds, $1,070,000, 107 HOUSES, Old Ellington Rd., BROAD BROOK, CONN. Tychsen Bros., Kenmore Rd., Bloomfield, Conn., CA $405,000, CHURCH and SUNDAY SCHOOL, Whitney St., HARTFORD, CONN. Bethel Baptist Church, 110 Russ St., Hartford, Conn. Awarded Dec. 28. Andrew Egressy, 123 S. Broad St., Phila., Pa., archt.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

▲ **D. C., Wash.**—BA 2/1—D. C. Govt., Dpt. Hys., 499 Pa. Ave. N.W., Washington Channel Bridge substructure and grading. Plans deposit $50. Sverdrup & Parcel, Inc., 915 Oliver St., St. Louis, Mo., archt. CD 9/5/58.

▲ **D. C., Wash.**—BA 2/3—D.C. Govt. Dpt. Highways, 499 Pa. Ave. N.W., Anacostia Freeway Bridge over Oxon Run Bay, Fed. Aid Interstate Project, I-295-2 (17). Plans deposit $20. CD 9/5/58.

▲ **N. Y., Brooklyn**—BA 2/3—Dpt. P. Wks., Rm. 2200, Municipal Bldg., New York, Zone 7, Contr. 6, plant outfall, Newtown Creek Pollution Control Project, Brooklyn Boro. Plans deposit $80. CD 11/16/44.

HEAVY CONSTRUCTION—LB & CA

▲ **NEW YORK**—State Dpt. P. Wks., State Office Bldg., Albany,

N. Y.—County Asphalt, Inc., 129 Main St., Tarrytown, N. Y., CA $1,351,014, Imprv. 6.99 mi. Rte. 22 between Center Berlin and Petersburg, Rensselaer Co.;

N. Y.—D. & T. Franzese Constr. Bros., Inc., Watkins Glen, N. Y., CA $887,000, b. conc. pavt. 3.16 mi., misc. work 0.02 mi., 3 brs. rein.-con. twin box 23.1 sp. 26.8 ft. sp. 23-5 ft. sp. Corning Post Creek SH 1745 A Rte. 414, R.C. 59-160, Steuben Co.;

N. Y.—The Callahan Rd. Co. Impr., South Bethlehem, N. Y., CA $938,691, b. conc. Type 1A pavt. 7.38 mi. Durhamville-Rome SH 1157, Rte. 46 R.C. 59-158, Oneida Co.;

N. Y.—Lizza & Sons, Inc., 152 South St., Oyster Bay, N. Y., CA $2,410,146, 9 in. c. conc. pavt. 2.28 mi., misc. work 0.76 mi. (access 0.88 mi.) 4 sp. comp. WF I-beam hy. sep. 206 ft. Rtes. 25 & 107 Massapequa Glen Cove, SH 9017; Jericho-Oyster Bay SH 9021; Jericho Turnpike, SH 9020 and Jericho Turnpike-Plainview Rd. SH 436 (FARC 59-133 Proj. US 377(2) US 500(2) U-1000(6), Nassau Co.;

N. Y.—Henry G. Keeler, 345 N. Park St., Albion, N. Y., CA $576,693, b. conc. pavt. Type 1A, 4.47 mi., misc. work 0.03 mi. rein.-con. triple open box bridge 50.9 ft. Gaines Murray Pt. 1, SH 8237, Gaines Murray, Pt. 2, SH 5697 & Ridgeway Gaines, SH 8202 Rte. 104 R.C. 59-157, Orleans Co.;

N. Y.—"Lee" Strong Constr. Co., Whitney Point, N. Y., CA $929,293, b. conc. Type 2B, 0.86 mi., b. conc. 0.57 mi., misc. work 0.02 mi., Br. 3 3 sp. comp. I-beam 201.6 ft. city of Norwich East Main St. Arterial Hy., East River Rd. State Hy. FAC 59-18 FASH 59, Chenango Co.;

N. Y.—Peckham Rd. Corp., 50 Haarlem Ave., White Plains, N. Y., CA $959,456, b. conc. pavt. 4.91 mi., misc. work 0.05 mi., rein.-con. slab bridge 25.1 ft. span, rein.-con. T-beam bridge 36.3 ft. sp. comp. beam bridge 43.0 ft. sp. Hunter-Windham, Pt. 2, SH 797, Cairo-Windham Pt. 4 SH 5583, Cairo-Windham Pt. 3, SH 8053 Rte. 23 FARC 59-153 Proj. F 1159(3), Greene Co. Grand total $8,052,294. Bids Nov. 19. CD 11/20, under LB.

▲ **NEW YORK**—State Dpt. P. Wks., State Office Bldg., Albany,

Hendrickson Bros., Inc., 63 N. Central Ave., Valley Stream, N. Y., CA $5,894,346, railroad track relocation and misc. work 2.42 mi., b. conc. pavt. 1.48 mi., 8 plate girder railroad crossings, etc., Village of Floral Park, PSC 7277, Nassau Co. Bids Nov. 19. CD 11/20, under LB.

PENNSYLVANIA—Pa. Hys. Dpt., 506 North Office Bldg., Harrisburg,

Geo. M. Brewster & Son, Inc., 275 Fort Lee Rd., Bogota, N. J., CA $672,909, 0.77 mi. divided highway, rein.-con. pavement, 2 concrete deck I-beam bridges, 3-span and single span bridge, interchange ramps and access drives, (connection to Scudders Falls bridge over Delaware River), Legislative Rtes. 1020 and 09151, north of Yardley, Bucks Co. Bids Oct. 30. CD 11/5, under LB.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; Industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
SOON LETS CONTRACT: SLC
LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily Issue in which last previous report was published.
OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
ENR Engineering News-Record
CD Construction Daily
For additional reports see Construction Daily.

▲ **McLean Contg. Co.**, Fidelity Bldg., Baltimore, Md., LB $1,895,180, (8 bidders), St. Paul St. Bridge section Jones Falls Expressway, BALTIMORE, MD. City, Bureau Hys., 303 Municipal Bldg., Baltimore 2, Md. Bids Dec. 23. CD 12/16.

Roy Ryan Sons Co., Inc., 5416 Boonville Highway, Evansville, Ind., CA $886,642, Michigan Ave. storm drains, between Bunker Hill Rd. and Perry St. N.E., WASH., D. C. D. C. Govt. Dpt. Sanitary Engineering, 499 Pa. Ave. N.W., Wash., D. C. Bids Dec. 22, awarded Dec. 30. CD 12/28, under LB.

BUILDINGS—LB & CA

▲ **Henry A. Knott, Inc.**, 2406 Greenmount Ave., Baltimore, Md., LB $2,115,112 (10 bidders), Loch Raven JUNIOR HIGH SCHOOL, near Baltimore, TOWSON, MD. Baltimore Co. Bd. Educ., Aigburth Rd., Towson 4, Md. Bids Dec. 29. CD 12/9.

William P. Lipscomb Co., Inc., Washington Bldg., Wash., D. C., CA $500,000, OFFICE, 30 F St. N.W., WASH., D. C. National Milk Producers Assoc., 1731 Eye St. N.W., Wash., D. C. Awarded Dec. 29. CD 11/27.

SOUTH

HEAVY CONSTRUCTION—BA

▲† **Miss., Meridian**—BACHELOR OFFICERS' QUARTERS, etc.—BA 2/4—Dist. P. Wks. Office, Sixth Naval Dist., Bldg. No. 13, U. S. Naval Base, Charleston, S. C., bachelor officers' quarters with mess, Naval Auxiliary Air Station, NBy-27630. Over $1,000,000. Plans deposit $145. Extended date. CD 11/24.

† **Florida**—BA About 2/9—U. S. Eng., P. O. Box 4970, Jacksonville, Zone 1, 4.3 mi. canal and Control Structure 21, gated two bay concrete spillway structure with automatically controlled, electric motor operated lift gates, CIVENG-08-123-60-29. $700,000. CD 9/29.

▲† **Miss., Meridian**—ADMINISTRATION BLDG., etc.—BA 2/11—Dist. P. Wks. Office, Sixth Naval Dist., Bldg. No. 13, U. S. Naval Base, Charleston, S. C., administration bldg., dispensary, ground school and link trainer bldg. and cold storage addn., Naval Auxiliary Air Station, NBy-25500. Over $1,000,000. Plans deposit $160. Extended date. CD 11/24.

BUILDINGS—BA

S. C., Clemson—PHYSICS—BA 1/28—Clemson College, 4 story, 70,000 sq. ft. physics bldg. $800,000. Plans deposit $100. Baker & Gill, 609 Chestnut St., Florence, S. C., archts. CD 9/4.

† **Ala., Huntsville**—BOQ—BA 2/5—U. S. Eng., P. O. Box 1169, Mobile, BOQ 70 man, Redstone Arsenal, ENG-01-076-60-328. $600,000. Plans deposit $6. CD 9/25.

BUILDINGS—LB & CA

Clutter Constr. Corp., 377 Westward Dr., Miami Springs, Fla., LB $783,000, (9 bidders), Naples SENIOR HIGH SCHOOL, EVERGLADES, FLA. Collier Co., Bd. P. Instruction Courthouse, Everglades, Fla. Bids Dec. 22. CD 12/11.

Caldwell-Scott, 340 SE 24 St., Fort Lauderdale, Fla., CA Est. $400,000, 2 story CB-S concrete, brick, Florida BANK of Fort Pierce, FORT PIERCE, FLA. Florida Bank, 1524 Barnett Bldg., Jacksonville, Fla. Bids Dec. 14. CD 12/1.

Edward M. Fleming Constr. Co., 4121 N.W. 25 St., Miami Fla., CA Approx. $700,000, WAREHOUSE and service facilities, N.W. 35 Ave. and 62 St., Seaboard Industrial Center, MIAMI, FLA. Seaboard Airline R.R. Co., 3600 W. Broad St., Richmond, Va. Bids Dec. 11, awarded Dec. 27. CD 12/22, under LB.

W. F. Thompson Constr. Co., 3228 Ponce DeLeon Blvd., Coral Gables, Fla., CA $971,250, Cutler Ridge JUNIOR HIGH SCHOOL, 19400 SW 97 Ave., MIAMI, FLA., Dade Co. Bd. P. Instruction, 275 NW 2 St., Admin. Bldg., Miami, Fla. Bids Dec. 16, awarded Dec. 27. CD 12/22, under LB.

Witters Constr. Co., Box 35006, Riverside Station, Miami, Fla., LB $800,000. Carol City CENTER, NW 183 St. and NW 27 Ave., Carol City, MIAMI, FLA. Desser & Garfield, 2900 NW 183 St., Miami, Fla. Bids Dec. 16. CD 12/11.

E. M. Hall, P. O. Box 5068, Pensacola, Fla., LB $455,000, Sherwood ELEMENTARY SCHOOL, PENSACOLA, FLA. Escambia Co. Bd. P. Instruction, 215 W. Garden, Pensacola, Fla.

▲ **Jack Culpepper Constr. Co.**, 114 E. 5 St., Tallahassee, Fla., LB $1,559,894, (9 bidders), COURTHOUSE addn., TALLAHASSEE, FLA. Bd. Comrs. Leon Co., Courthouse, Tallahassee, Fla. James A. Stripling, 308 East Park Ave., Tallahassee, Fla., archt.

W. H. Cooper Constr. Co., 11715 9 St., Tampa, Fla., LB $503,677, (16 bidders), TEACHING AUDITORIUM THEATRE BLDG., Proj. 603-6, University of South Florida, TAMPA, FLA. Florida State Bd. Control, 2nd Floor, Courthouse, Tampa, Fla. F. M. Kelley, Jr., University of South Florida, Tampa, Fla., archt. D. E. Britt Assocs., 309 SE 9 Ave., Fort Lauderdale,

Fla., structural engrs. Gamble, Pownall & Gilroy, 1407 E. Las Olas Blvd., Fort Lauderdale, Fla., assoc. archts. Bids Dec. 23. CD 12/1.

James A. Eiland, Jr., Inc., Box 487, Bunkie, La., LB $447,447, HOSPITAL addn., THIBODAUX, LA. Bd. Directors St. Joseph's Hospital, Thibodaux, La. Bids Dec. 23. CD 12/1.

▲ **Edw. Schmidt & National Shopping Centers, Inc.,** 1210 Sunset, Covington, Ky., Owner Builds, $1,400,000, SHOPPING CENTER, 20 acres, north of Beechwood Rd., COVINGTON, KY. Harley Fisk, 19 E. Pike St., Covington, Ky., engr.

▲ **F. W. Owens Co.,** 119 N. 5th, Louisville, Ky., LB $1,712,000, (5 bidders), 2 story HOSPITAL addn., LOUISVILLE, KY. Jewish Hospital, 217 E. Chestnut St., Louisville, Ky. Bids Dec. 30. CD 12/4.

▲† **Ingalls Iron Works Co.,** 620 4th Ave. S., Birmingham, Ala., CA, fabrication 8,700 tons structural steel for STEAM PLANT, Unit No. 1, PARADISE, KY. Tennessee Valley Authority, New Sprankles Bldg., Knoxville, Tenn. CD 10/6.

▲ **J. A. Jones Constr. Co.,** 311 Church St., Nashville, Tenn., CA $4,100,000, 200 bed State MENTAL HOSPITAL, MEMPHIS, TENN., Tennessee State Building Comn., Nashville, Tenn., Awarded Dec. 23. (Correction—contractor). CD 3/13, under CA.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

† **Ind., Peru**—BASE THEATER—BA 1/21—Dist. P. Wks. Office Bldg. 1-A, Great Lakes, Ill., about 61x148 ft., 500-seat, structural steel, masonry Base Theater, Bunker Hill Air Force Base, Spec. No. 22376/59. $250,000-$500,000. CD 9/9/58.

BUILDINGS—BA

† **Wis., Madison**—RESERVE CENTER, etc.—BA 2/9—U.S. Eng., 475 Merchandise Mart, Chicago 54, Ill., 2 story, 22,500 sq. ft. reserve center bldg., 1 story, 3,600 sq. ft. motor vehicle storage shed, incl. exterior facilities, ENG-11-032-60-12. $500,000. Plans deposit $5. CD 12/23.

BUILDINGS—SLC

- **Wis., Milwaukee** — BANK — First Wisconsin National Bank, 735 N. Water St., soon lets contract bank remodeling, $2,000,000-$3,000,000. E. J. Kraus, 735 N. Water St., archt.

HEAVY CONSTRUCTION—LB & CA

† **Maxon Constr. Co.,** 260 Farr Hills Ave., Dayton 19, O., CA $747,584, 2 story, 41 x 260 ft. special laboratory analysis bldg. 828 (ATIC) addn., 2nd story addn. to existing bldg., Wright Patterson Air Force Base, ENG-15-029-60-8, DAYTON, O. U. S. Eng., 237 4th Ave., Huntington, W. Va. Bids Dec. 15. CD 12/28, under LB.

▲ **Gerhardt F. Meyne Co., Inc.,** 308 W. Washington St., Chicago 6, Ill., CA $3,000,000, 2½ story, 200 ft. tower, Radio and TV Broadcasting Station, Campbell Ave. and Addison St., CHICAGO, ILL. WGN-TV, Inc., 441 N. Michigan Ave., Chicago 11, Ill. Awarded Dec. 28. CD 1/16/59.

▲ **Paschen Contractors, Inc.,** 2739 N. Elston Ave., Chicago, Ill., LB $1,307,000, 1 story, brick, structural steel frame water works, Southwest Pumping Station, pumphouse No. 80-187-59-4, CHICAGO, ILL. Dpt. Purchases, City Hall, Chicago 2, Ill. Bids Dec. 28. CD 12/22.

BUILDINGS—LB & CA

▲ **Knowlton Constr. Co.,** Bellefontaine, O. LB $1,317,700 (4 bidders), WOMEN'S DORMITORIES, MIAMI UNIVERSITY, OXFORD, O. Dpt. P. Wks., State Dept. Bldg., Columbus, O. Bids Dec. 23. CD 12/1.

C. A. Tharnstrom Co., 7401 N. St. Louis Ave., Skokie, Ill., CA $600,000, STORAGE, RESEARCH and OFFICE, BARRINGTON, ILL. Quaker Oats Co., Prudential Plaza, Chicago 1, Ill. Awarded Dec. 11.

▲ **S. N. Nielsen Co.,** 3059 Augusta Blvd., Chicago, Ill., CA $5,184,000, HOUSING PROJECT 231, Robert Brooks Extension, 13th St. and Blue Island Ave., CHICAGO, ILL. Chicago Housing Authority, 608 S. Dearborn St., Chicago 5, Ill. Bids Dec. 15, awarded Dec. 29. CD 12/17.

▲ **S. M. Wilson & Co.,** 1616 Cleveland Ave., Granite City, Ill., CA 175 ft. long extension of tapping side for OPEN HEARTH BLDG., Strongbarn roofing and siding, GRANITE CITY, ILL. Granite City Steel Co., 20th and Madison Ave., Granite City, Ill.

▲ **Tonyan Constr. Co.,** 100 Borden Ave., McHenry, Ill., CA $1,000,000, radio and television FACTORY, HARVARD, ILL. Admiral Corp., 3800 W. Cortland St., Chicago, Ill. Awarded Dec. 16. CD 1/5.

M. A. Lombard & Sons, 1215 W. 103 St., Chicago, Ill., CA $400,000, 90 x 130 ft., 69 x 180 ft., 18 x 65 ft. CHURCH and SCHOOL, 126 St., PALOS HEIGHTS, ILL. St. Alexander's Parish, 14327 Highland Ave., Orland Park, Ill. Awarded Dec. 16. J. L. Bartolomeo, 10836 S. Western Ave., Chicago, Ill., archt.

G. Wergin, 200 Wausau Ave., Wausau, Wis., CA $449,800, HOSPITAL AND NURSES' DORMITORY remodeling, WAUSAU, WIS. St. Marys Hospital, Maple Hill, Wausau, Wis. Bids Dec. 2. CD 11/17.

MISSISSIPPI TO ROCKIES

HEAVY CONSTRUCTION—BA

▲† **Tex., Fort Worth**—AIR ROUTE TRAFFIC CONTROL CENTER—BA 2/9—Federal Aviation Agency, Bldg. No. 3, Annex A, Haslet Rd., air route traffic control center bldg., near Amon Carter Field, Proposal 2-60-75. $4,000,000. CD 9/1.

† **N. M., Albuquerque**—STEAM DISTRIBUTION SYSTEM—BA About 2/16—U. S. Eng., P.O. Box 1538, Albuquerque, steam distr. sys. addn., incl. approx. 8 steam manholes, 1 new manhole, and approx. 650 ft. steam and condensate underground conduit, Sandia Base, Bernalillo Co., ENG-29-005-60-58. $25,000. CD 12/20/57.

BUILDINGS—BA

Minn., Sleepy Eye—ENGINE GENERATOR, etc.—BA 1/19—City, City Hall, furnish, install dual fuel diesel elec. generator unit and aux. equip. of 2,250 kw. to 3,000 kw. or two units of combined capacity or one unit of 1,750 kw. $400,000. Plans deposit $30. Associated Consultants, Sexton Bldg., Minneapolis, engrs. CD 11/12.

Minn., Wells—SCHOOL—BA 1/26—Bd. Educ. Independent School Dist. No. 224, 1 story Senior High School. $400,000. CD 12/30, under LB.

HEAVY CONSTRUCTION—LB & CA

† **General Electric Co.,** 610 Electric Bldg., Omaha, Neb., CA $925,876, furnishing oil circuit breakers near Pierre, Oahe Reservoir Proj., CIVENG-25-066-60-27, SOUTH DAKOTA. U. S. Eng., 1709 Jackson St., Omaha 2, Neb. Bids Nov. 17. CD 11/23, under LB.

▲† **Compu Dyne Corp.,** Hatboro, Pa., CA $2,713,826, Schedule A, propellant loading sys., Ellsworth Air Force Base, ENG-25-066-60-35, RAPID CITY, S. D. U. S. Eng., 1709 Jackson St., Omaha 2, Neb. Bids Dec. 3, awarded Dec. 24. Grand total $11,240,262. CD 12/7, under LB;
Keenen Pipe & Supply, 4700 Dahlia St., Denver, Colo., CA $3,949,772, Schedule C, high pressure vessels, (Rapid City, S. D.);
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee, Wis., CA $4,576,664, Schedule E, diesel generators, (Rapid City, S. D.).

NEBRASKA—State Dpt. Rds. & Irrigation, State House, Lincoln,

Northwestern Eng. Co., 1311 St. Joe St., Rapid City, S. D., CA $924,274, paving 5.2 mi. Interstate Hy. 80, Lincoln, Lancaster Co. Bids Aug. 27, awarded Dec. 26. CD 9/4, under LB.

† **Peterson, Garby & Joseph,** North Little Rock, Ark., LB $774,103, est. $693,828, missile facilities, Altus Air Force Base, ENG-34-066-60-2, ALTUS, OKLA. U. S. Eng., Box 61, Tulsa, Okla. Bids Dec. 29. CD 11/18.

TEXAS—State Hy. Comn., Austin,

Texas Bitulithic, P.O. Box 10365, Dallas, Tex., CA $514,861, widen structures, concrete pavement HMAC, flex. base, surf. and shoulders, 2.535 mi. Hy. US 75, Proj. F-569(32), etc., Navarro Co. Bids Dec. 16. CD 12/21, under LB.

▲ **TEXAS**—State Hy. Comn., Austin,

Tex.—**Fred Hall & Sons,** Box 488, Valley Mills, Tex., CA $859,871, reconstr., wid'n. structures, base and b. conc. pavement 14.432 mi. Hy. ST 6, Proj. 593(11), McLennan Co.;

Tex.—**R. N. Adams,** Box 581, Kaufman, Tex., CA $655,978, grading, structures 4.886 mi. Hy. US 81 and 287, Proj. F-14(12), Wise Co.;

Tex.—**Ferrier Bros.,** Box 1079, Seymour, Tex., CA $1,103,933, grading, structures 2.784 mi. Hy. I.H. 20, Proj. I-20-2(29)280, Taylor Co.;

Tex.—**Cage Bros.,** 6959 San Pedro, San Antonio, Tex., CA $1,249,956, grading, structures 4.102 mi. Hy. ST 73, Proj. U-1052(52), Jefferson Co. Bids Dec. 16. Grand total $3,869,738. CD 12/21, under LB.

TEXAS—State Hy. Comn., Austin,

E. E. Hood & Sons, Box 14395, San Antonio, Tex., CA $621,577, structure widen, flex. base, b. conc. pavement 17.984 mi. U.S. 181, Bee and San Patricio Counties, Proj. F-151(10) and F-180(10). Bids Dec. 15. CD 12/21.

TEXAS—Texas Hy. Comn., Austin,

M. E. Ruby, M. E. Ruby, Jr. & Aime Bridge Co., P.O. Box 4098, Austin, Tex., CA $972,879, grading, base and HMAC pavement, structures 2.459 mi. Hy. Loop 293 in Austin, Proj. U-1115(2) and UG 1115 (3 and 4) Travis Co. Bids Dec. 15. CD 12/21, under LB.

† **Moorman & Singleton,** P.O. Box 216, Wills Point, Tex., CA $744,565, est. $789,342, portion of embankment and partial excavation of spillway of Navarro Mills dam and reservoir, Richland Creek, CIVENG-41-443-60-28, TEXAS. U. S. Eng., Box 1600, Fort Worth, Tex. Bids Dec. 18, awarded Dec. 23. CD 12/24, under LB.

† **COLORADO**—Bureau P. Rds., Room 242, Bldg. 40, Denver Federal Center, Denver,

Hopkins Constr. Co., 1340 So. Lipan St., Denver 23, Colo., CA $620,909, 4.144 mi. Forest Highway Proj. 26 H5, South St. Vrain, Boulder Co. Bids Dec. 23. CD 12/9.

† **Allison & Haney, Inc.,** 1412 Broadway NE, Albuquerque, N. M., LB $558,552 (5 bidders), channelization of Rio Grande, Belen area, Unit 4, Rio Grande project DC-5258, NEW MEXICO. Bureau Reclamation, Dpt. Interior, Albuquerque, N. M. Bids Dec. 22. CD 11/24.

BUILDINGS—LB & CA

Millstone Constr. Co., 8510 Eager Rd., Brentwood 17, Mo., CA Est. $400,000, three 16,000 sq. ft. split-level air-conditioned, etc. STORES, U. S. 66 east of Crestwood Plaza Shopping Center, CRESTWOOD, MO. Brod-Dugan Paint & Wallpaper Co., 7430 Forsyth Blvd., Clayton 5, Mo.

Brentwood Homes, Inc., 1600 Holcombe Blvd., Houston, Tex., Separate Contracts, $400,000, 24 DWELLINGS, HOUSTON, TEX. CD 12/24.

Gilpin Constr. Co., 1600 Holcombe Blvd., Houston, Tex., Owner Builds, $407,200, 20 DWELLINGS, HOUSTON, TEX. CD 12/24.

Hillside Apartments, 5200 Memorial Dr., Houston, Tex., Owner Builds, $460,000, 36-unit APARTMENT, HOUSTON, TEX. CD 12/24.

▲ **LOG Development Co.,** 5251 Indigo St., 8923 S. Rice St., Houston, Tex., Owner Builds $1,415,000, 125 DWELLINGS, HOUSTON, TEX.

▲ **Modern Homes, Div. of State-Wide Lumber Co.,** 10106 Fleming St., Houston, Tex., Owner Builds, $414,000, 33 DWELLINGS, $406,500, 30 DWELLINGS, $438,000, 35 DWELLINGS, HOUSTON, TEX. Grand total $1,258,500. CD 10/22.

J. E. King Constr. Co., Orange, Tex., and Market St., Houston, Tex., Owner Builds, $428,175, 21 DWELLINGS; $406,525, 25 DWELLINGS, Greenway Park, ORANGE, TEX. CD 11/27.

▲ **Centennial Constr. Co.,** 109 Dover Dr., and 11111 N. Central Expressway, Richardson, Tex., Owner Builds, $445,000, apartments; $444,445, 38 DWELLINGS; $433,000, 34 DWELLINGS, RICHARDSON, TEX. Grand total $1,322,445. CD 11/18.

W. R. Craig Constr. Co., 114 W. Glenview St., San Antonio, Tex., Owner Builds, $425,000, 34 DWELLINGS, SAN ANTONIO, TEX. CD 12/21.

Denton & Karren Co., Inc., 1042 Milan Bldg., San Antonio, Tex., Owner Builds, $429,000, 25 DWELLINGS, SAN ANTONIO, TEX. Hesson & May, 148 Olmos Dr. W., San Antonio, Tex., and Reginald Roberts Assocs., 2600 N. McCullough Ave., San Antonio, Tex., archts.

Kinder Homes, 747 W. Sunset Rd., San Antonio, Tex., Owner Builds, $409,775, 36 DWELLINGS; $438,100, 42 DWELLINGS, SAN ANTONIO, TEX.

G. S. McCreless, Home-Builder, 3522 S. New Braunfels Ave., San Antonio, Tex., Owner Builds, $407,000, 37 DWELLINGS; $442,000, 34 DWELLINGS, off Goliad Rd., SAN ANTONIO, TEX. CD 12/28.

▲ **Del E. Webb Constr. Co.,** P.O. Box 4066, Phoenix, Ariz., CA Est. $2,500,000, 14 story OFFICE, ALBUQUERQUE, N. M. Del E. Webb & Assocs., S. 23 Ave., Phoenix, Ariz., and Roy T. Drachman, Tucson, Ariz. CD 3/26.

FAR WEST

HEAVY CONSTRUCTION—BA

▲† **California**—BA 1/26—U. S. Eng., 751 S. Figueroa St., Los Angeles, San Gabriel River imprvt., Santa Fe to Whittier Narrows Flood Control Basin, CIVENG-04-353-60-11. $5,000,000. Extended date. CD 12/11.

▲† **Idaho, Mountain Home**—TECHNICAL FACILITIES—BA 2/5—U. S. Eng., City-County Airport, Walla Walla, Wash., missile silos, equipment terminals, propellant terminals, control centers, powerhouse, etc., for technical facilities, Mountain Home Air Force Base, ENG-45-164-60-1, WS107A-2. Over $30,000,000. Plans deposit $200. Advanced date. CD 12/30.

BUILDINGS—BA

▲ **Calif., Whittier**—DEPARTMENT STORE—BA 1/27—New York Life Insurance Co., at Broadway Department Store, 401 South Broadway, Los Angeles, 130,000 sq. ft. concrete frame Broadway department store. $6,000,000. Charles Luckman & Assocs., 9920 Sunset Blvd., Los Angeles, archts. CD 5/25.

▲ **Calif., Norwalk**—SCHOOL—BA 2/2—Cerritos Junior College Dist., 11442 E. Alcondra Blvd., Junior College addns. $1,500,000. Extended date. CD 12/17.

HEAVY CONSTRUCTION—LB & CA

▲ **Westinghouse Elec. Corp.,** U.S. National Bank Bldg., Portland, Ore., CA $1,541,112, furnish 5 main unit transformers for Wanapum Dam and spare transformer with adaptors so that it may be used at either Wanapum or Priest Rapids dam, Ephrata, WASHINGTON. Grant County Public Utility Dist., Ephrata, Wash. Bids Nov. 30. CD 12/3, under LB.

▲† **Swanson & Youngdale, Inc.,** 737 France Ave. No., Minneapolis, Minn., CA $1,148,263, guided missile assembly bldg. and warehouse, Fairchild Air Force Base, ENG-45-108-60-44, SPOKANE, WASH. U. S. Eng., 1519 S. Alaskan Way, Seattle 4, Wash. Bids Dec. 15. CD 12/18, under LB.

▲ **CALIFORNIA**—State Div. Hys., 1120 N. St., Sacramento,

Frederickson & Watson Constr. Co., 873 81st Ave., Oakland, Calif., CA $1,024,444, interchange, frontage roads and connections US 101 between Lucas Valley Rd. and 0.2 mi. south of San Pedro Rd. in and near San Rafael, Marin Co. Awarded Dec. 30. Bids Dec. 16. CD 12/21, under LB.

▲ **CALIFORNIA**—State Div. Hys., 1120 N. St., Sacramento,

Calif.—**Gordon H. Ball & Gordon H. Ball, Inc.,** 300 Camille Ave., Danville, Calif., CA $1,795,176, grade, pave, 4 structures to convert US Hy. 99 from Expressway to full freeway from 3.5 mi. north of Tulare to Visalia Airport Interchange, Tulare Co.;

Calif.—**Frederickson & Watson Constr. Co.,** 873 81st Ave., Oakland, Calif., CA $1,697,777, grade, surf. 2.9 mi. 4-lane freeway between 0.4 mi. west US Hy. 40 near Vallejo and 0.1 mi. west of Benicia City limit incl. 3 bridges X-SOL-74B, Solano Co. Bids Dec. 16. CD 12/21, under LB.

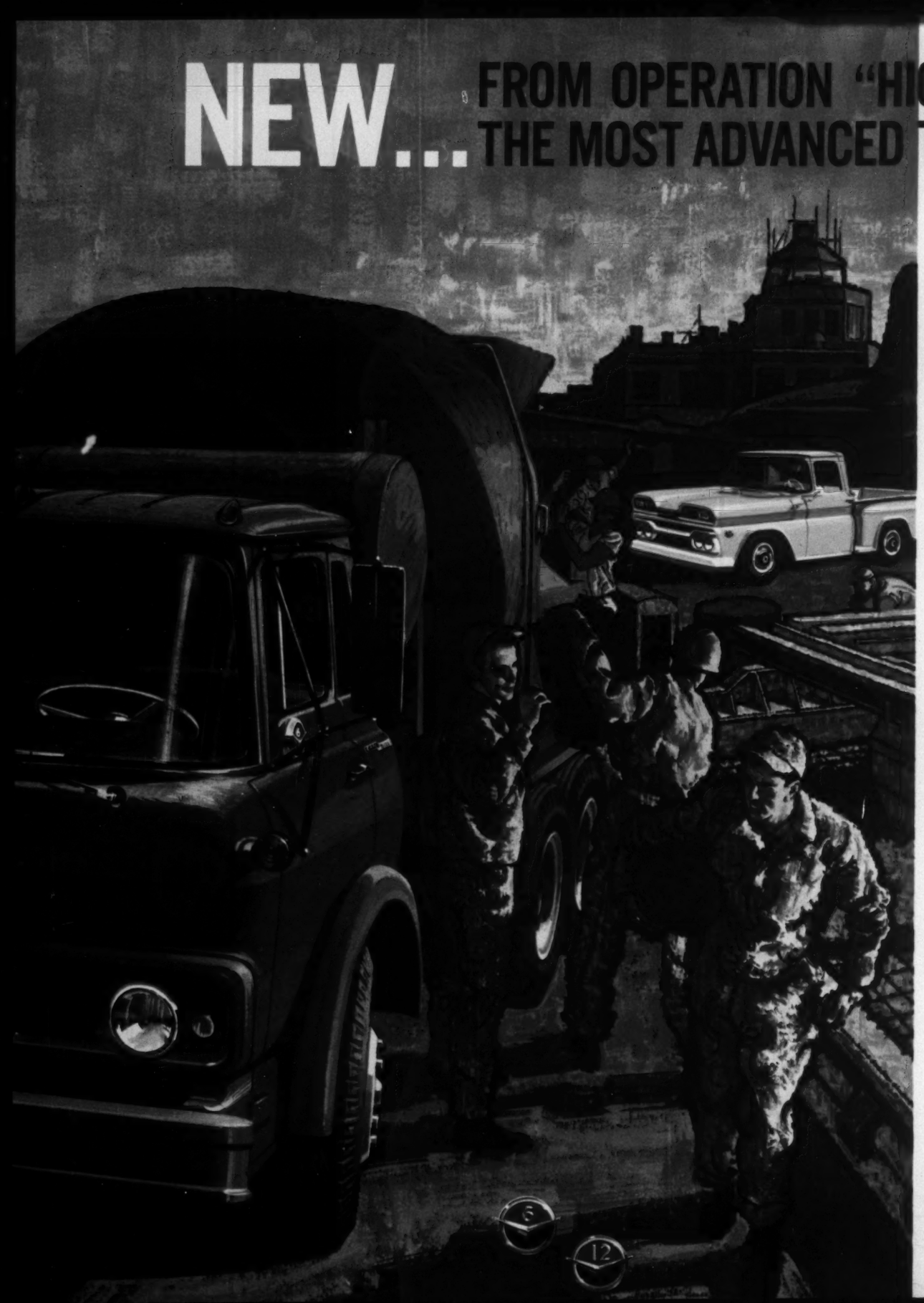
BUILDINGS—LB & CA

† **Price McNemar Constr. Co.,** 13726 Saticoy St., Van Nuys, Calif., CA $555,980, TECHNICAL BLDG. (Fort Huachuca Drone Test Facility), ENG-04-353-60-44, FORT HUACHUCA, ARIZ. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Dec. 16. CD 12/24, under LB.

▲ **Ross B. Hammond,** 627 S.E. Division Pl., Portland, Ore., CA $1,300,000, ELECTRONIC PARTS ASSEMBLY BLDG., PORTLAND, ORE. Tektronix, Inc., 9450

(Continued on page 91)

NEW... FROM OPERATION "HIGH GEAR" THE MOST ADVANCED TRUCKS IN 20 YEARS!



Only GMC can offer contractors *all* these money-saving, money-making features in 90-inch BBC trucks: V-6 gas, Twin-Six gas and V-6 diesel power. Specially-reinforced double-life cabs. GCW to 120,000 lbs. 3-piece side-opening hood and swing-out grille sections for easiest, quickest servicing. There's a lot more. See the new Conventional Ninety-Inchers today.

This GMC 4000 Series is typical of the new '60 Conventionals. With a choice of 150, 165 and 180 hp. V-6 engines; 15 axle-transmission combinations; vacuum or full air brakes; you have all the flexibility needed to exactly meet all construction hauling requirements in the 19,500-23,000-lb. GVW range . . . the one truck that will keep job time down and profits up.

New GMC Pickups outlast all others! Rugged new V-6 gives up to 3 times longer engine life . . . saves up to 10% on gas. New rigid frames resist twisting and increase cab life. New independent front suspension and coil rear springs give a smoother ride, easier handling. Choice of 34 combinations including 4-wheel-drive models.

Under this new GMC tilt-cab is the exclusive 205 hp. V-6! One demonstration will prove the superior performance, extremely short turning and biggest safety vision. Shown is the LW 5500 Series with up to 48,000 lbs. GVW, up to 60,000 lbs. GCW. New steel tilt-cabs have a 72-inch BBC and 52-inch front axle placement to haul biggest loads. They stay on the job, are easy to service and drive.

GMC TRUCK & COACH—A GENERAL MOTORS DIVISION
PONTIAC, MICHIGAN

BIG GMC BREAK-THROUGH

in engine, chassis and cab engineering drastically cuts your hauling costs!

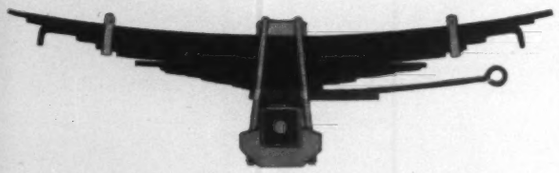
1. New engines that last up to 3 times longer than others!
2. New stronger, lighter frames to haul bigger loads longer!
3. New front and rear suspension! New wide track for easier maneuvering! Smoother ride and longer sheet metal life!
4. New roomier, more rugged cabs . . . complete range of BBC dimensions!
5. New "Power-Mated" drive lines with the proper gearing and strength to match every construction haul!

From ½-ton to 60-ton General Motors leads the way!

GMC
GENERAL MOTORS CORPORATION
TRUCKS

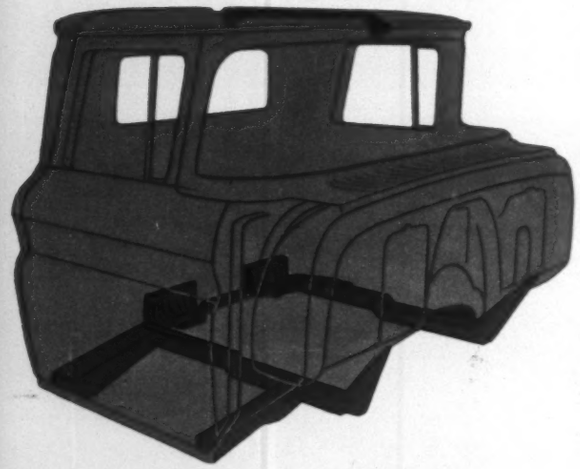
PULL

TODAY'S ONLY MODERN TRUCK CHASSIS!



NEW Springs with Longer Life and Easier Ride—GMC's standard 3-inch wide vari-rate rear springs last longer on any terrain, because they are under less stress. All braking and torque forces, normally absorbed by springs, are directed to the frame by the strong radius-rod-type leaf. New true progressive cam action adjusts the spring to the load . . . an easier ride—empty or loaded.

NEW Frames with Extra Strength and Rigidity—One look shows GMC frames are extremely rugged . . . built for the most severe construction hauls. Unique design, stronger materials and exclusive construction methods guarantee extra load-carrying ability, extra durability.



NEW Double-Life Cabs—1960 GMC cabs will stand up for many years even on the most rugged construction hauls . . . last twice as long as ordinary cabs. This great durability is the result of full double-wall construction, extra-heavy reinforcing inside the cab and special, sturdy understructure—as shown above.

FROM GMC...

12

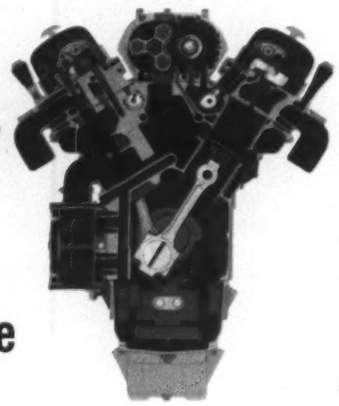
NEW GMC TWIN-SIX Most pulling power of any standard gas engine!

Now you can get 630 pounds-feet torque over an extended engine speed range! Plenty of working power and reserve power in this 702 cubic-inch power plant to get the biggest construction loads moving—and keep them rolling—with least shifting.

It's lasting power, too. Maximum governed engine speed is only 2400 rpm. This low-stress, easy-stroking speed greatly extends engine life, cuts operating costs to the bone.

Max. torque 630 @ 16-1900. Max. hp. 275 @ 2400.

NEW V-6 DIESEL Most power per dollar! lowest maintenance costs!

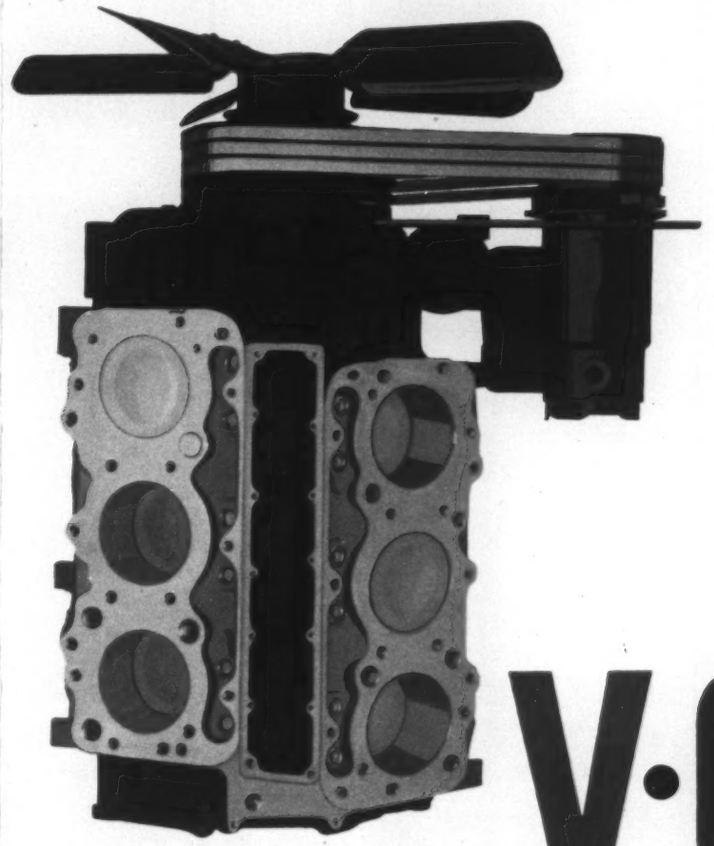


Proved, efficient 2-cycle design with power on every stroke gives you more power per dollar, more power per pound, more power per cu. in. displacement! Extra-sturdy construction and modern, simplified design keeps GMC Truck diesel engine maintenance costs far below competitive engines. Also important to cut down-time—you get complete one-stop parts and service at every GMC Diesel Truck Dealer.

189 hp. standard. 210 hp. optional at no extra cost.

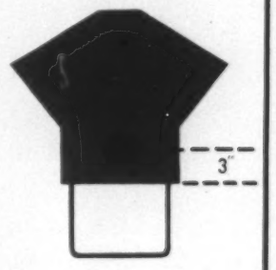
NOTE: With this new, advanced 6V-71 engine, you get all the time-tested performance, economy and durability features of the famous GMC 6-71SE diesel in a shorter, lighter and more compact design.

TODAY'S ONLY TRULY MODERN ENGINE DESIGN



V-6

6



Full, Rigid Crankshaft Support!

Short, rigid V-6 block has extended cast skirt that reaches 3 full inches below the center line of the crankshaft to minimize distortion and deflection, costly wear and failures.

NEW GMC V-6 ENGINES

Outlast all others! Up to 3 times longer life—proved by actual tests!

Here's why—full torque is produced at low, economical engine speeds! Full power extends over a broad rpm range! "Over-square" design, shortest stroke of any comparable truck-built engines, cuts wear and improves performance! 33% more cooling area, 3 times more water volume (up to 176 gallons per minute) eliminates all life-killing engine "hot spots"! High-volume lubrication (up to 14 gallons per minute) increases longevity!

THERE'S A NEW V-6 FOR PROFIT-PERFORMANCE ON EVERY HAUL		
Model	Max. Torque	Max. Horsepower
305A	260 @ 16-2000	150 @ 3600
305B	266 @ 12-1400	150 @ 3600
305C	270 @ 14-1600	165 @ 3800
351	312 @ 18-2000	180 @ 3400
401	377 @ 1400	205 @ 3200

Fully machined combustion chambers assure equal displacement in each cylinder for smoothest power. There are no destructive "hot spots" due to carbon build-up.

6 bolts around each cylinder (not 4) make a positive head-to-block seal and eliminate bore deflection.

Note: No two exhaust valves are adjacent. Heat concentration is prevented to extend valve life.

This widest bridge permits the best cooling, 3 times more water for faster heat transfer, greatly increased valve life.

See your GMC Truck Dealer listed in the Yellow Pages for the most advanced construction trucks in 20 years!

(Continued from page 84)

S.W. Barnes Rd., Portland, Ore. Awarded Dec. 29. CD 12/14.

Baingo Bros., 8929 Exposition Blvd., Los Angeles, Calif. CA **$478,700**, brick BOWLING ALLEY, 5227 Santa Monica Blvd., LOS ANGELES, CALIF. Jos Barnese, 8929 Exposition Blvd., Los Angeles, Calif.

H. A. Temple, 18570 Sherman Way, Reseda, Calif., CA **$896,900**, 54 stucco DWELLINGS, Amestoy Ave., Vintage, Lassen and Septo Sts., NORTHRIDGE, CALIF. Kinzie Land Co., 18570 Sherman Way, Reseda, Calif.

C. V. Holder, Inc., 18011 S. LaSalle, Gardena, Calif., LB **$652,480**, est. $500,000, Dulles SCHOOL No. 11 and Gardenhill SCHOOL addns., LaMirada, NORWALK, CALIF. Norwalk-LaMirada School Dist., 12820 S. Pioneer Blvd., Norwalk, Calif. Bids Dec. 22. CD 12/8.

Nick Pokrajac, 1322 S. Myrtle Ave., Monrovia, Calif., CA **$871,646**, Los Coyotes SCHOOL, La Mirada, NORWALK, CALIF. Norwalk-La Mirada City School Dist., 12820 S. Pioneer Blvd., Norwalk, Calif. Bids Dec 15. CD 12/22, under LB.

E. H. Moore & Sons, 693 Mission St., San Francisco, Calif., LB **$451,000**, Base Bid (6 bidders), 1 story, reinforced grouted brick masonry and wood frame Pacific Heights ELEMENTARY SCHOOL, San Bruno, PACIFICA, CALIF. Laguna Salada Union Elementary School, P.O. Box 5, Pacifica, Calif. Masten, Hurd & Gwathmay, 526 Powell St., San Francisco, Calif., archts. Bids Dec. 22.

▲ **Dimwiddie Constr. Co.**, 210 Crocker Bldg., San Francisco, Calif., LB **$1,258,554** (7 bidders), 2 story, 81,000 sq. ft. precast concrete bent sys., tilt-up walls, etc., MANUFACTURING PLANT, Hansen Way, PALO ALTO, CALIF. Varian Assoc., 611 Hansen Way, Palo Alto, Calif. Michael Gallis, 414 Mason St., San Francisco, Calif., archt. Bids Dec. 29. CD 4/9/56.

▲ **Haas & Haynie**, 244 Pine St., San Francisco, Calif., CA **$3,200,000**, general contract 800-car UNDERGROUND GARAGE in Chinatown, SAN FRANCISCO, CALIF. Portsmouth Plaza Corp., c/o Gould & Degenkolb, engrs., 149 California St., San Francisco, Calif. CD 10/6.

▲ **Rothschild, Raffin & Weirick**, 875 Sansome St., San Francisco, Calif., LB **$3,638,735**, site preparation and Phase I of ADMINISTRATION BLDG., Santa Venetia Area, SAN RAFAEL, CALIF. Bd. Supervs. Marin Co., Courthouse, San Rafael, Calif. Bids Dec. 22. CD 11/17.

▲ **Romley Constr. Co.**, 2780 Mt. Diablo Blvd., Walnut Creek, Calif., LB **$1,250,000**, 20 STORE SHOPPING CENTER, Treat Lane and Clayton Rd., near WALNUT CREEK, CALIF. Manuel Santos, c/o contractor.

CANADA

BUILDINGS—BA

▲ **Que., Montreal** — SCHOOL — BA 1/19 — Montreal Catholic School Comn., 3737 Sherbrooke St. E., 4 story, bsmnt., 64x245 ft. brick, rein.-con. school, concrete fdn., Hochelaga and Letourneux Sts. $1,500,000. Jean A. Gelinas, 4450 Cote des Neiges Rd., archt. Paul Pelletier, 506 St. Catherine St. E., engr. CD 12/31.

▲ **Que., Montreal**—APARTMENT—BA 1/25—Amico Realties Ltd., 970 Clement St., St. Laurent, 11 story, 2 bsmnts., penthouse, rein.-con., brick, block, precast balcony panels, marble and granite apartment, Hutchison St. $1,000,000. George Shubin, 4326 Sherbrooke St. W., archts. Eskenazi, Loeberberg, Slone, Bernstein, 6819 Decarie Blvd., engrs. (Correction—status). CD 10/12, under CA.

▲ **Ont., Windsor** — SCIENCE — BA 2/16 — Assumption University, 400 Huron Line Rd. (selected list of bidders) 3 story, bsmnt., 158x368 ft. U-shaped brick and block walls, science bldg., poured concrete fdns. at University, $1,000,000. Pennington & Carter, Morris Block, archts. CD 5/19.

Ont., Ottawa—PHYSICS LABORATORY—BA 2/17—Dpt. P. Wks., Hunter Bldg., 3 story, bsmnt., 210x406 ft., structural steel, brick, block, stucco walls, Applied Physics Laboratory, $400,000. Plans deposit $500. Dobush & Stewart, 4635 Sherbrooke St. W., Montreal, Que., archts. de Stein & Assocs., 4147 Sherbrooke St. W., Montreal, Que., engrs.

BUILDINGS—LB & CA

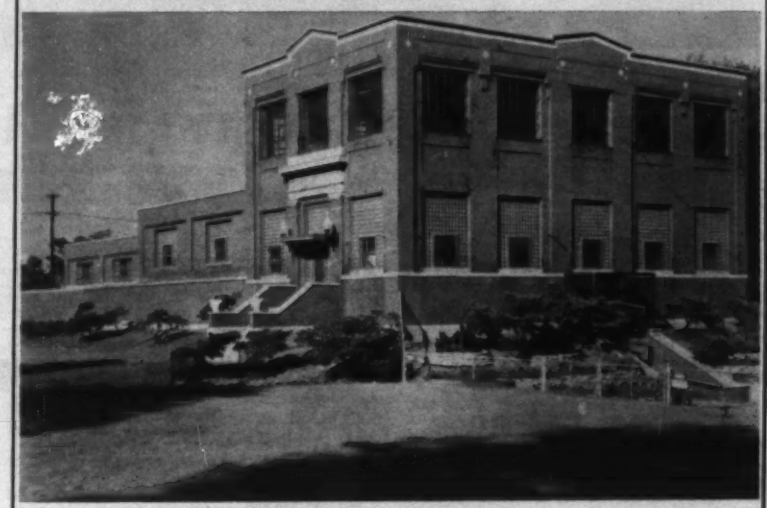
▲ **Kenney Constr. Co., Ltd.**, Yarmouth, N. S., CA **$1,533,017** (7 bidders), 4 story, rein.-con. HOSPITAL BLDG., YARMOUTH, N. S. Yarmouth Hospital Comn. of Municipality of Yarmouth, Yarmouth, N. S. Edward J. Turcotte, c/o Bank of Montreal, Main St., Yarmouth, N. S., archt. Awarded Dec. 24. CD 2/18/58.

M. J. Sulpher & Sons, Ltd., 175 Reglan St., Renfrew, Ont., CA **$432,807** (10 bidders), 1½ story 10 room structural steel frame, PUBLIC SCHOOL, rein.-con. fdn., RENFREW, ONT. Renfrew P. School Bd., Box 215, Renfrew, Ont. Bids Dec. 9, awarded Dec. 24. CD 11/24.

▲ **Speckert-Morris Ltd.**, Box 329, Markham, Ont., CA **$1,152,014**, 3 story, precast beams, columns, floors and ceilings, open-web joists, brick spandrels, DEER PARK SCHOOL, swimming pool, TORONTO, ONT. Toronto Bd. Educ., 155 College St., Toronto, Ont. Bids Dec. 16, awarded Dec. 18. CD 12/30, under LB.

J. R. Bourdages Constr. Ltd., 10575 St. Laurent Blvd., Montreal, Que., CA **$650,000**, SCHOOL and GYMNASIUM, Laval Ave., MONTREAL, QUE. Montreal Catholic School Comn., 3737 Sherbrooke St. E., Montreal, Que. Awarded Dec. 27. CD 12/8, under LB.

Use Northern Gravel for Rapid Sand Filter



C. F. Bufe, Superintendent, reports that the filtering material used in the Wyandotte, Michigan water plant was received as ordered from the Northern Gravel Company and has done a very satisfactory job for their city.

Filter Sand Specifications

are carefully laid out. The Effective Sizes and Uniformity Coefficients used by Consulting Engineers and also recommended by the American Water Works Association are the result of long years of research and experience.

The Northern Gravel Company is equipped to give you prompt shipment whether it be one bag or many carloads, exact to specifications. Filter sand can be furnished with any effective size between 0.35 MM and 1.20 MM.

Chemical Quality

of the filter sand is also important. It must be hard, not smooth, and free of soluble particles. This requires perfect washing and grading facilities. We have every modern device for washing, drying, screening and testing.

Filter Gravel

supporting the Filter Sand Bed must be, in turn, properly graded to sizes calculated to support the Filter Sand, and be relatively hard, round and resistant to solution.

Northern Gravel has no equal in facilities and our reserves of both sand and gravel are inexhaustible. Northern Gravel Company has been in business over 40 years. We guarantee uniformity of products and our records enable us to duplicate your requirements on short notice. Our location is central and we have commodity rates in every direction.

Northern Gravel Company

Muscatine, Iowa

Box 307

Phone: Amherst 3-2711

▲ **Smith Bros. & Wilson,** 524 2 Ave. N., Saskatoon, Sask., CA $1,230,000, DENTAL BLDG., corner Spadina Cresc. and 23 St., SASKATOON, SASK. Owner, c/o Gerald Hamilton, archt., 1280 West Pender St., Vancouver, B. C. CD 8/26/58.

PROPOSED PROJECTS

WATER SUPPLY

Fla., Hollywood—Miramar Utilities, Inc., Box 2871, water distr. system, sewage collection system, sewage pumping station, sewage force main, Miramar Subdivision, West Hollywood. $500,000. Rader & Assocs., 100 Biscayne Blvd., Miami, consult. engrs.

▲ **Alta., Calgary**—City, City Hall, WW extension. $1,375,750. CD 4/10/51.

▲ **Ont., Hamilton**—City, City Hall, third water intake in Lake Ontario, $3,500,000.

SEWERS, WASTE DISPOSAL

▲ **Calif., Marysville**—Linda County Water Dist., Hy. 99 East, bond election Jan. 26, sewers, near here. $1,950,000.

Ga., LaGrange—City, City Hall, Yellow Jacket Creek Sewage Disposal Plant. $700,000. Wiedeman & Singleton, P. O. Box 1878, Atlanta, consult. engrs.

▲ **Ill., Granite City**—City, City Hall, sewerage sys. addns. $5,000,000.

▲ **Ill., Rockford**—City, City Hall, $4,000,000 bond election Apr. 12, sewer and drainage imprvs., incl. storm sewers, drainage, channels, northwest area, $1,059,815; Amvett subdivision section $115,293; northwest relief sewers, $770,000; relief sewer Waldo St., $128,000; sewers in Rolling Green area $922,800; outfall sewer Halsted Rd., $100,225; Kent and Keith Creek imprvs., $850,000; trunk sewers, northeast area, $70,000. Warren Van Praag, Inc., 253 S. Park St., Decatur, consult. engr. CD 6/19.

Mass., Dedham—Town, Incinerator Comn., Town Hall, Incinerator. Approx., $500,000. Fay, Spofford & Thorndike, Inc., 11 Beacon St., Boston, engrs. Constr. 1960.

Mont., Miles City—City of Miles City, City Hall, plans by Morrison-Maierle, Inc., Helena, sanitary sewerage sys., Proj. P-Mont-3113, $472,000. Constr. in 1961. CD 12/14.

N. Y., Cheektowaga—Town, Town Hall, extension sanitary sewer lines in Sewer District No. 7. $800,000.

N. Y., Grand Island—Town, Town Hall, trunk sewer and remodeling sewage treatment plant. $395,000.

▲ **N. Y., Johnson City**—Village, Village Hall, intercepting sewers and sewage treatment plant. $3,900,000.

N. Y., Madrid—Town, Town Hall, sanitary sewerage sys. and treatment plant. $464,000.

▲ **N. Y., Medina**—Village, Village Hall, sanitary relief sewers, $960,000; sewage treatment plant, $320,000.

N. Y., Rhinebeck—Village, Village Hall, sanitary sewerage sys. and treatment plant. $590,000.

▲ **N. Y., Syracuse**—Onondaga P. Wks. Comn., West Side Trunk Sewer, $100,000; imprv. Ley Creek Treatment Plant, $300,000; force main in Liverpool Sanitary District, $640,000. Bloody Brook Trunk Sewer. $240,000.

N. Y., Yorktown—Town, Town Hall, sanitary sewerage sys. and treatment plant. $433,000.

N. C., Belmont—Catawba Heights Sanitary Dist., P.O. Box 80, sewage disposal plant and collection lines, $300,000. Moore, Gardner & Assocs., 514 S. Fayetteville St., Asheboro, consult. engrs. CD 3/19.

N. C., Laurinburg—City, City Hall, voted $350,000 bonds Dec. 15, sewage disposal plant, $300,000.

▲ **O., Toledo**—City, City Hall, incinerators, $1,500,000.

Ore., Seaside—City, City Hall, sewerage system and treatment plant. $497,640. Stevens & Thompson, 2234 SW 5 Ave., Portland, consult. engrs.

▲ **Va., Harrisonburg**—City, City Hall, sewage disposal plant, Smith River, $1,500,000; sewage collection lines, $1,000,000; outfall sewer lines, $1,100,000.

▲ **Va., Radford**—City, City Hall, sewage disposal plant. $1,400,000.

▲ **Va., Richmond**—Dpt. P. Wks., City Hall, 217 Governor, Proj. 7-204, North Ginter Park Sewer, $485,000; Goode's Creek Storm Sewer, $225,000; Proj. 8-401, Hull St. Interceptor Sewer $200,000; Proj. 7-106, West Fork Jordan's Branch Storm Sewer, $100,000. CD 8/4/50.

Wis., Cudahy—City, City Hall, garbage disposal plant. $250,000-$500.000. Mel Fiss, city engr.

BRIDGES

▲ **NEW YORK** — Dpt. P. Wks., State Office Bldg., Albany,
Onondaga Co.—grade separation structure, carrying Seventh North St. over Interstate Rte. 81 outskirts of Syracuse and interchange ramps south of structure, FAI Proj. $1,000,000.

▲ **OHIO**—Dpt. Hys., State Depts. Bldg., Columbus,
Mahoning Co.—McGuffey St. bridge, $2,182,000. Bids about March 1960.

▲ **Ont., Kenora**—Town, Town Hall, vehicular subway under Canadian Pacific Railway Co., 9th Ave. $2,000,000.

QUEBEC—Province of Quebec, Dpt. P. Wks., Parliament Bldgs., Quebec City,
Grand Mere—widening bridge over St. Maurice River. $300,000.

STREETS AND ROADS

Conn., Hartford—City, City Hall, sidewalks and curbing various locations. $365,000. Wilfred W. DeMay, city engr.

▲ **NEW YORK** — Dpt. P. Wks., State Office Bldg., Albany,
Rockland Co.—reconstr. 4 mi. Rte. 304, between New Jersey-New York State line at Pearl River and New York State Thruway crossing at Bardonia, FAI Project. $1,200,000.

EARTHWORK, WATERWAYS

▲ **Ohio**—Ohio Dpt. P. Wks., State Depts. Bldg., Columbus, dredging Tuscarawas River, Akron and Barberton, Summit Co. $1,000,000. Francis Stafford, 888 Home, Akron, consult. engr.

▲ **O., Akron**—Comrs. Summit Co., Court House, Akron, dredging Tuscarawas River, Mud Run, Wolf Creek, Pidgeon Creek and Achocalog Ditch. $1,000,000. Francis Stafford, 888 Home St., consult. engr.

AIRPORTS

▲† **Calif., Moffett Field**—COMPUTER BLDG.—National Aeronautics & Space Admin., Procurement Office, Ames Research Center, 2 story rein.-con. computer bldg., Ames Research Center. $1,250,000. Simpson & Stratta, 325 Fifth St., San Francisco, Calif., engrs. CD 7/16.

AMERICANS ABROAD

▲ **Australia, Melbourne**—HOTEL—Intercontinental Hotel Corp., (Pan American Airways), 135 East 42nd St., New York, N. Y., U.S.A. and Southern Cross Proprietary, Ltd., Melbourne, Australia, hotel. $11,000,000.

PUBLIC BUILDINGS

Ark., Malvern—SCHOOL—Malvern Special School Dist., voted bonds Junior High School, elementary school. $740,000. Wittenberg, Delany & Davidson, 510 Center St., Little Rock, archts.

Ark., Newport—FACTORY—Jackson Co. voted $350,000 bonds shoe factory.

▲ **Calif., Colton**—SCHOOL—Colton Union High School Dist., $1,000,000 bond election Apr. 26, high school in Bloomington District.

▲ **Calif., Del Paso Heights**—SCHOOLS—Grant Union High School Dist., 1400 Grand Ave., schools. $4,500,000.

Calif., Glendale—SCHOOL—Glendale Unified School Dist., 411 E. Wilson Ave., plans by William Woollett, 2500 W. 6th St., Los Angeles, elementary school, Lowell Ave., La Cresenta, $550,000. CD 6/19/58.

Calif., Los Angeles—SCHOOL—Bd. Educ., 1425 S. San Pedro St., plans by Stiles & Robert Clements, 850 Wilshire Blvd., South Park School. $900,000. CD 6/9/58

Calif., San Mateo—POLICE BLDG.—City, City Hall, plans by Alfred Johnson, AIA & Assoc., 33 N. B St., 30,000 sq. ft. masonry and wood police bldg. $870,000. Nishkian & Nishkian, 1045 Sansome St., San Francisco, consult. engrs. CD 4/20.

Conn., Cheshire—SCHOOL—Town, Town Hall, Junior High School. $400,000.

Conn., Fairfield—SCHOOL—Town, Town Hall, McKinley Elementary School addn. $600,000.

Conn., Groton—SCHOOLS—Town, Town Hall, plans by Scholfield, Lindsay & Liebig, 309 State St., New London, Pleasant Valley and Northeast Elementary Schools addns. $695,000. CD 11/20/58.

Conn., Norwich—SCHOOL—Town, Bd. Educ., City Hall, plans by Chandler & Palmer, 14 Thayer Bldg., Junior High School, Ox Hill Rd. $900,000. Bemis & Freeman, 36 Pearl St., Hartford, consult engrs. CD 12/9.

† **Fla., Jacksonville**—SCHOOLS—Bd. Public Instruction, Duval County, Courthouse, voted $35,000,000 bonds Dec. 22, 28 schools in Greater Jacksonville, and remodeling others. CD 10/23.

▲ **Ill., Belleville**—JUNIOR HIGH SCHOOL—Belleville Elementary School Dist., 118 Bd. Educ., 700 Lucinda St., voted $2,673,000 bonds Dec. 19, Junior High School, Royal Heights Rd., new Abraham Lincoln Elementary School, Douglas Elementary School, near Carlyle Rd. and East Main St., Union School addn. Bids in 1960. CD 11/27.

Ind., Indianapolis—SCHOOL—Bd. Educ., Warren Twp. School Dist., 901 N. Post Rd., school, N.E. corner Bade and Prospect Rd., east of Mitthoefer Rd., $600,000. Constr. in 1960 or 1961.

▲ **Ind., Indianapolis**—SCHOOL—Bd. Educ., Washington Twp. School Dist., 1605 E. 86 St., school, 18-acre site at 79th St. west of Allisonville Rd., $500,000. Bids soon; school, 15-acre site on west side of Ditch Rd., north of 86th St., $500,000. Constr. in 1961.

▲ **Ind., Rensselaer**—HOSPITAL—Trustees, Co. Hospital, c/o Comrs., Jasper Co. Courthouse, 60-bed Jasper County Hospital, at east edge of city. $1,000,000.

Iowa, Denison — SCHOOL — Bd. Educ., Denison, voted $584,000 bonds Dec. 17, 37,500 sq. ft. elementary school, $506,250. Smith, Voorhees & Jenson, Architects Associated, Davidson Bldg., Des Moines, archts. CD 12/1.

Iowa, Fairfield—SCHOOL—Bd. Educ. Community School Dist., $650,000 bond election Jan. 19, elementary school and Lockridge and Lincoln School addns. $675,000. N. Clifford Pralle, 910 Insurance Exchange Bldg., Des Moines, archt. CD 10/20.

Kan., Colby—SCHOOL—Bd. Educ., 470 N. Lincoln St., plans by Mann & Co., 201 E. 1st, Hutchinson, high school. $750,000. CD 12/22.

Ky., Richmond—MEN'S DORMITORY—Commonwealth of Ky., Div. Purchases, Frankfort, plans by Brock & Johnson, 154 Barr St., Lexington, 3 story, no bsmt., 40,000 sq. ft. brick, concrete block men's dormitory. $650,000. Staggs & Fisher, 508 E. Main St., Lexington, consult. engrs.

La., Pineville—NURSING HOME—State Dpt. Institutions, State Capitol, Baton Rouge, nursing home, State Colony & Training School. $700,000.

Me., Westbrook—SCHOOL—Town, Stroudwater St., high school addn. Approx. $450,000. Constr. 1960.

Mass., Chelmsford—SCHOOL—Town, Town Hall, plans by Kilham, Hopkins, Greeley & Brodie, 9 Arlington St., Boston, elementary school addn. Approx. $400,000. Constr. 1960.

▲ **Mass., Lakeville**—HOSPITAL—Commonwealth of Mass., Dpt. Public Health, c/o Div. Bldg. Constr., 38 Chauncy St., Boston, Mass., plans by Desmond & Lord, 6 Beacon St., Boston, Mass., hospital, State Sanitorium, $3,600,000. Constr. 1960.

▲ **Mass., Tewksbury** — HOSPITAL — Commonwealth of Mass., Dpt. P. Health, c/o Div. Bldg. Constr., 38 Chauncy St., Boston, plans by W. Chester Browne & Assoc. Inc., 122 Arlington St., Boston, Contr. H-60-2, hospital bldgs., State Hospital. $13,000,000. Constr. on first unit in 1960.

Minn., Marshall—SCHOOL—Bd. Educ. Independent School Dist. No. 413, voted $560,000 bonds Dec. 15, high school and elementary school addns. Hickey & Little, 2110 Rand Tower, Minneapolis, archts. CD 11/26.

▲ **Minn., St. Paul**—SCHOOL—Bd. Educ., Special School Dist. 2, 628 Courthouse, Battle Creek Elementary School, Upper Afton Rd. and Ruth St. Extension, $500,000; Frost Lake Elementary near Hoyt Ave. and Hazelwood St. $500,000. CD 11/9.

▲ **Minn., Wayzata**—SCHOOL—Bd. Educ. Independent School Dist. No. 284, voted $1,750,000 bonds Dec. 17, Senior High School. $1,000,000. CD 12/17.

▲ **Mo., Ferguson (St. Louis 35 P. O.)**—SCHOOLS—Ferguson-Florissant School Dist. R-2, Bd. of Educ. 655 January Ave., Zone 35, $4,000,000 bond election Jan. 16, McCleer Junior High School addn., 1890 S. Florissant Rd., Florissant, $1,900,000; Junior High School adjacent to 2800 Parker Rd. $1,900,000; Bond election date changed. CD 12/23.

Mo., Smithville—HOSPITAL—City, City Hall, plans by Hewitt & Royer, 607 Westport Rd., Kansas City, Mo., community hospital. $900,000. Bids Feb. 1, 1960.

▲ **Mont., Billings**—DORMITORY, etc.—Eastern Montana College of Education plans by Orr Pickering & Assocs., Pratt Bldg., dormitory, dining room, student union. $2,500,000. Bids about May. CD 10/29.

N. C., Greensboro—CHEMISTRY LABORATORY—Agriculture & Technical College, 312 Dudley St., plans by McMinn, Norfleet & Wicker, 2828 Lawndale Dr., chemistry laboratory. $450,000.

▲ **N. C., Oxford**—SCHOOL—Bd. Educ., Granville Co., voted bonds, Consolidated High School, Berea, Oak Hill and Stovall Dists. $1,250,000.

▲ **N. C., Troy**—HIGH SCHOOL—Bd. Comrs. Montgomery Co. School Bd., voted bonds Dec. 14, high school, Rte US 220, Biscoe, $600,000; high school Rte. NC 27, Wadesville, $600,000. CD 11/11.

▲ **O., Brewster**—SCHOOL—Fairless Bd. Educ., bond election May 3, high school. $1,540,000. CD 11/9.

▲ **O., Columbus**—APARTMENTS—Columbus Metropolitan Housing Authority, 425 W. Rich, three 14 story and thirty-three 2 and 3 story, brick apartments, 30-acre site, Leonard-St. Clair area. $8,000,000. CD 11/19/52.

Tenn., Kingsport—CITY HALL—City, City Hall, constr. city hall. $450,000.

Tex., Pasadena—ADMINISTRATION—Pasadena Independent School Dist., Pasadena, plans by Lewis S. McGuire, 1726 S. Richey St., Houston, central administration bldg. $785,000.

Utah, Salt Lake City—SCHOOL—Jordan School Dist., 9361 S. State, plans by Ashton, Evans & Brazier, 24 S. West Temple, elementary school, 8400 S. Monroe St. (150W.). Over $400,000.

▲ **Va., Colony** — TRAINING SCHOOL, etc. — Virginia Mental & Hygiene & Hospital Dpt., Capitol Bldg., Richmond, Lower Patients and Boys Facility, $929,000; infirmary, $784,400, Lynchburg Training School and Hospital.

Wash., Seattle—SCHOOL—Seattle School Bd., 815 4 Ave. N., plans by Bindon & Wright, Norton Bldg., Seattle, Zone 4, Leschi Elementary School addn., $460,000, Bids early 1960; plans by Naramore, Bain, Brady & Johanson, 904 7 Ave., Minor school addn., $400,000, Bids early 1960. CD 11/9/56.

▲ **Wash., Tacoma**—SCHOOL—Tacoma Public Schools, S. 8th and Tacoma Sts., bond election Feb. 9, to finance Junior High School, $682,280 and combination Elementary Junior High School, $1,000,000, CD 6/16; Wilson High School addns., $924,000 (first unit $221,298). Constr. in 1964, CD 6/16; elementary school near S. 49 and Alaska Sts., $407,451; elementary school, Alameda and Latah Sts., Fircrest $412,451; elementary school replacing Bryant School, $687,031. CD 4/3.

Wash., Tumwater—HIGH SCHOOL—School Dist. 333, election Mar. 10 on special levy to raise $130,000, high school, $850,000. W. A. Johnson & Assocs., 3508 Broadway, Everett, archt. CD 7/13.

▲ **W. Va., Athens**—FACULTY OFFICES, etc.—State, Concord College, Huntington, 14 classrooms, 57 faculty offices, $550,000; men's dormitory, $600,000; women's dormitory, $600,000; faculty and married students apartments, $448,000, Concord College.

▲ **W. Va., Wheeling**—SCIENCE CLASSROOMS—State, West Liberty State College, Huntington, W. Va., science classrooms. $1,200,000.

▲ **Wyo., Riverton**—SCHOOL—School Dist. No. 25, voted $1,115,000 bonds Dec. 15, Junior High School addn., $586,000; elementary school, $423,500. Karl Krusmark Casper, archt. CD 12/11.

▲ **Man., Winnipeg**—CITY HALL—City, Hall, plans by Green, Blankstein, Russell & Assocs., 222 Osborne St. N., 10 story, glass faced city hall, $6,000,000. CD 12/20/54.

Que., La Tuque—SCHOOL—Dpt. Youth & Social Welfare, Parliament Bldgs., technical school. $400,000.

▲ **Que., Montreal**—HIGH SCHOOL—Montreal CathoHc School Comn., 3737 Sherbrooke St. E., plans by Jean A. Gelinas, 4450 Cote des Neiges Rd., 4 story, bsmnt., 64 x 245 ft., concrete, brick, rein.-con. high school, Hochelaga and Letourneau Sts. $1,500,000. Paul Pelletier, 506 St. Catherine St. E., consult. engr. CD 5/11.

COMMERCIAL BUILDINGS

▲ **Alaska, Anchorage**—OFFICE—Life Insurance Co. of Alaska, Anchorage, plans by F. Y. Toribara, W. 8 Sprague, Spokane, Wash., 16 story office. $2,000.000. Constr. soon.

▲ **Calif., Pleasant Hills**—APARTMENTS—George J. Barnett, c/o Harry Nakahara, archt., 624 Las Juntas, Martinez, 14 two story 92-unit garden apartments, incl. swimming pool. $1,000,000.

▲ **Colo., Denver**—CANCER RESEARCH—Eleanor Roosevelt Institute, c/o Linder, Wright & White, archts., 831 14 St., 4 story, 40,000 sq. ft. cancer research. Over $1,000,000.

Conn., Bridgeport—CHURCH—Blessed Sacrament R.C. Church, 275 Union Ave., plans by J. Gerald Phelan, 211 State St., brick church. $400,000.

Conn., Bridgeport—LIBRARY—University of Bridgeport, 200 Park Place, plans by Charles W. Walker, 114 State St., 2 story, brick Carlson Library addn. $400,-000. CD 12/18.

Conn., Darien—SCHOOL—St. John's R.C. Church, 1976 Post Rd., Noroton, plans by Edward F. Allodi, 125 Leroy Ave., parochial school, Middlesex Rd. $400,-000. Fred S. Dubin Assocs., 178 S. Whitney St., Hartford, consult. engrs. Bids in Fall 1960. CD 10/22.

Conn., East Haddam—OPERA HOUSE—Good Speed Opera House Foundation, Inc., c/o Sage Goodwin, archt., 15 Lewis St., Hartford, restoration Good-speed Opera House. $500,000. Robert W. Loomis, 32 Maple Ave., Windsor, consult engr. CD 11/16.

Conn., Manchester—CHURCH—St. Bartholomew's R.C. Parish, 741 Middle Tpk., plans by Polak & Sullivan, 1397 Chapel St., New Haven, church and educational bldg. E. Middle Tpk, Rockledge. $400,000.

Conn., Stratford—CHURCH—Diocese of Bridgeport, Chancery Office, 459 Washington Ave., Bridgeport, church, rectory and school, Wigwam Lane, $405,000.

Fla., St. Petersburg—APARTMENT—Brightwaters Tower of Snell Isle, Inc., 1365 Snell Island Blvd., 44-unit 9 story apartment. $925,000.

Fla., St. Petersburg — LABORATORIES, LIBRARY — Florida Presbyterian College, Maritime Base, plans by Connell-Pierce, Garland & Friedman, 315 N.W. 27 Ave., Miami, Zone 32, science laboratories, biology, chemistry and physics laboratories, $710,000; library, $580,000. Perkins & Will, 309 W. Jackson St., Chicago, Ill., consult. engrs. CD 4/21.

▲ **Ga., Atlanta**—SHOPPING CENTER—John C. Portman, Jr., c/o Edwards & Portman, archts., 153 Peachtree N.E., Atlanta, Ga., Trammel Crow & W. R. Hahn, 425 S. Field St., Dallas, Tex., shopping center. $12,-000,000.

▲ **Ill., Moline**—RESIDENCE and TRAINING SCHOOL—Lutheran Hospital, 6th St., 7 story nurses residence, training school, $1,210,000.

▲ **Ill., Waukegan**—HOTEL—Jacob Reuben, 130 N. Sheridan Rd., plans by Wondreis & Johnson, 28a Center St., Lake Bluff, remodeling 7 story Clayton Hotel, 130 N. Sheridan Rd. $2,000,000.

Kan., Salina—DORMITORY—Kansas Wesleyan University, North Santa Fe St., plans by Wilson & Co., archts.-engrs., 631 Crawford, dormitory. $500,000. CD 4/9.

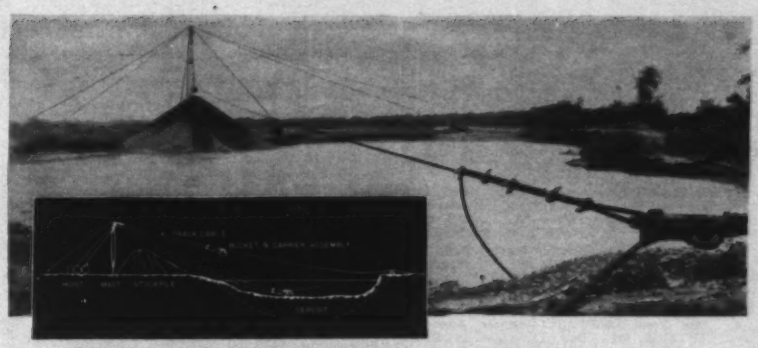
Mass., Ashland—CHURCH—St. Cecilia R. C. Parish, 1 Lake St., Brighton, plans by W. Chester Browne & Assoc., Inc., 122 Arlington St., Boston, Mass., church. Approx. $400,000. Constr. 1960.

Mass., Medford—SCHOOL—St. Raphael's R. C. Parish, Chancery Office, 1 Lake St., Brighton, Mass., plans by Whelan & Westman, 262 Washington St., Boston, parochial school. Approx. $400,000. Constr. 1960.

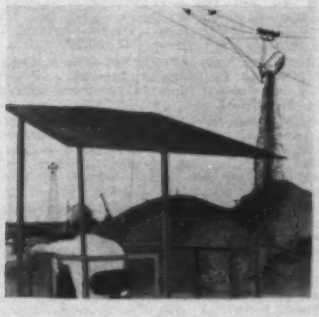
▲ **Minn., Minneapolis**—APARTMENT—Niles Holding Co., 712 Second Ave. South, 6 story, 113 unit apartment, 2625 Park Ave. $1,000,000. Constr. 1960.

Minn., St. Paul—DORMITORY—St. Catherine's College, 2094 Randolph Ave., plans by Magney, Setter, Leach, Lindstrom & Erickson, 250 Foshay Tower, Minneapolis, dormitory. $800,000. Constr. 1960. CD 3/19.

▲ **Mo., Sunset Hills (St. Louis 27 P.O.)**—SHOPPING CENTER—Del Webb & Assocs., 3130 E. Van Buren St., Phoenix, Ariz., plans by Syl G. Schmidt & Assocs., archts.-engrs., 1819 Railway Exchange Bldg., 611



FROM PIT TO STOCKPILE...
DIG and HAUL for 8¢ per yd.
WITH A SAUERMAN SLACKLINE



Operating costs as low as 8¢ per yd. for labor, power and maintenance are reported by Slackline Cableway owners when digging free-caving material at average depth and haul distances.

These low costs are achieved by using just one machine—the new Sauerman Slackline Cableway. Multiple equipment is not needed to supply your required tonnage. For example, on an average haul and digging depth, a single medium size machine will charge a 200 tph. plant.

The high Slackline mast permits building a large pile which can supply plant demands through a plate feeder and tunnel conveyor, front-end loader or clamshell. The new Sauerman torque converter diesel-hoist automatically matches power to load demands and is designed for continuous duty. Fluid drive cushions out shock loads to reduce fuel and maintenance costs, extend cable life.

Increasing land values and depleting resources make it necessary to get all the material out of your deposit. You can do this with a Sauerman Slackline. The machine will dig from ground level to deep under water and keep your plant running additional years at the lowest possible operating cost. Several pits are now operating Slacklines on 1000-ft. spans with average hauls of 500 to 700 ft. and from 100-ft. depths.

Write or call, giving your tonnage requirements, depth and length of deposit—if available. We will promptly supply more information on Slackline Cableways, and show you how to *save with a Sauerman.*

SAUERMAN BROS., INC. 632 SO. 28th AVE. BELLWOOD, ILL.
Linden 4-4892 • Cable CABEX—Bellwood, Illinois

Crescent Scrapers • Slackline and Toutline Cableways • Durolite Blocks

Olive St., St. Louis, Zone 1, shopping center, incl. department store, supermarket, shops, motor hotel, Lindberg Blvd. and US Hy. 66. $6,500,000.

Neb., Omaha—CHURCH, etc.—Morning Star Lutheran Church, 330 S. 84th, plans by Leo A. Daly, 8600 Indian Hills Dr., church and educational bldg. S.E. section of Indian Hills addn. $500,000.

N. Y., New York—STORE—Godfrey Nurses House, Inc., 1775 Broadway, Zone 19, plans by S. J. Kessler & Sons, 598 Madison Ave., Zone 22, 1 story store, 480-500 Lenox Ave. $750,000.

N. Y., New York—STORE—Godfrey Nurses House, Inc., 1775 Broadway, Zone 19, plans by S. J. Kessler & Sons, 598 Madison Ave., Zone 22, 1 story store, 440-460 Lenox Ave. and 83 West 132nd St. $450,000.

N. Y. New York—STORE—Godfrey Nurses House, Inc., 1775 Broadway, Zone 19, plans by S. J. Kessler & Sons, 598 Madison Ave., Zone 22, N. Y., 1 story store, 2196-2218 Fifth Ave. and 2 West 135th St. $400,000.

N. Y., New York—APARTMENT—Mercer Apartment Corp., 80 Fifth Ave., Zone 11, plans by H. F. Feldman, 415 Lexington Ave., Zone 17, N. Y., 6 story apartment, 80-86 Bleeker St. $927,000.

N. Y., New York—APARTMENT—New Town Equities, Inc., 825 Stone St., Brooklyn, plans by Philip Birnbaum, 12 E. 48th St., Zone 17, 12 story apartment, 314-322 East 52nd St. $480,000.

▲ **N. Y., New York** — APARTMENT — Seventy Sixth Estate, Inc., Maurice Epstein, pres., 285 Madison Ave., Zone 17, 16 story apartment, northeast corner of 86th St. and First Ave. $2,500,000.

▲ **N. Y., New York**—APARTMENT—The Northerly Co., 285 Madison Ave., Zone 17, plans by H. I. Feldman, 415 Lexington Ave., Zone 17, apartment, 47 East 9th St. $1,600,000.

▲ **N. Y., New York**—APARTMENT—215 E. 68th St. Corp. (Owner is Samuel Rudin & Son), 415 Madison Ave., Zone 17, plans by Emery Roth & Sons, 400 Park Ave., Zone 22, 32 story apartment on west side of Second Ave. from E. 68th to E. 69th Sts. and 275 car garage. $10,215,000.

N. Y., New York—APARTMENT—Vanderbilt House, 31-53 Steinway St., Long Island City, plans by H. I. Feldman, 415 Lexington Ave., Zone 17, apartment, 48 East 34th St. $880,000.

▲ **O., Bedford Heights**—APARTMENTS—Sidney Simon, 2168 S. Taylor Rd., Cleveland, Zone 18, plans by Arthur M. Hemlock, 10010 Euclid Ave., Cleveland, Zone 6, 18 two story, brick, frame apartments, Libby Rd. $1,000,000. Constr. Spring 1960.

▲ **O., Berea**—APARTMENTS—Baldwin-Wallace College, Berea, faculty and married students apartments, $1,000,000. Constr. 1970.

O., Berea—DORMITORY—Baldwin Wallace College plans by Heine, Crider & Williamson, 105 Front St., 120-bed mens dormitory, $600,000. CD 2/28/57.

▲ **O., Chagrin Falls**—APARTMENTS—Andrew Rosenfeld, Citizens Bldg., Cleveland, Zone 15, garden type apartments, $1,000,000. Constr. in Spring. CD 12/10, under Arthur Mills & Assocs., as owners.

O., Cincinnati—HOMES—Presbyterian Home for Aged, Llanfair Ave., plans by Cordes, Pressler, Houck & Assocs., 4939 Paddock, homes addn. $500,000.

O., Cleveland—APARTMENTS—Lake Breeze Home Co., 11 Public Sq., Zone 13, seven 2 story, brick, frame Wellington Arms Apartments, 4812 Lee Rd., $500,000.

O., Dayton—SUPERMARKET—Fame Dpt. Store, 5225 Springboro Pike, 1 story 150x150 ft. supermarket. $450,000. Bids soon.

▲ **O., Dayton**—DORMITORIES—University of Dayton, 300 College Park, dormitories for 600 men and 375 women, $3,500,000. CD 10/24/49.

▲ **O., Findlay**—SCIENCE HALL—Findlay College, Findlay, plans by Sullivan, Isaacs & Sullivan, Findlay, science hall, $500,000; field house, library, $850,000. Constr. between 1963-1965.

O., Mack—HOMES—Ray Mathias, 3017 Daytona Ave., Cincinnati, 40 homes, street off Taylor Rd. $680,000. Edward Niemeier, 4484 Harrison, Cincinnati, consult. engr.

▲ **O., Maple Heights**—APARTMENTS—A. Siegler & Sons, 5117 Lee Rd., Bedford, will not construct 8-11 suite apartments, Warrensville Center Rd., opposite fire station, $1,150,000. Weinberg & Teare, Citizens Bldg., Cleveland, Zone 14, archts. Project abandoned. CD 3/19.

▲ **O., Piqua**—SHOPPING CENTER—Manhattan Investment Co., 2700 E. Main, Columbus, 100,000 sq. ft. shopping center, 17-acre site, southwest corner of Sunses Drive and W. High St. to be called Piqua Plaza, $1,700,000. Constr. in 1960.

▲ **O., Toledo** — HOSPITAL — Willys Diagnostic Clinic, Woodruff and School Pl., 1 story hospital, $1,700,000; retirement home, $2,000,000-$3,000,000; nurses' home, $750,000, part of 5 year program.

▲ **O., Twinburg**—SHOPPING CENTER—Summit Shopping Center, 705 Society Bank Bldg., Cleveland, Zone 14, plans by Rudolph J. Orgler, 7113 Euclid Ave., Cleveland, Zone 3, first stage shopping center, east side Rt. 14, $2,000,000. CD 2/24/56, under Porath Realty Co., as owner.

▲ **O., Youngstown**—STUDENT CENTER—Youngstown University, 410 Wick Ave., plans by Kling & Frost, 661 Wick Ave., student center, $1,500,000. Constr. in 1960.

▲ **Pa., Phila**—MOTEL—Crossway Motor Hotel, Inc., c/o Stanley Slote, Box 387, Scarsdale, N. Y., 95-room motel, swimming pool, University Ave. and Schuylkill Expressway. Over $1,000,000. Henry H. Moger, Jr., 250 Main St., White Plains, N. Y., archt.-consult. engr.

▲ **Pa., Wynnewood** — APARTMENT — Thomas Wynne Development, 123 S. Broad St., Phila., plans by George Daub, 2123 Delancy St., Phila., 419-unit apartment. Over $5,000,000.

▲ **Tex., Beaumont**—DWELLINGS—Howard L. Terry, Builder-Developer, and Walter M. Mischer, Contractor, 75 Holmes Rd., Houston, 22 dwellings, $416,000; 20 dwellings, $409,500; 24 dwellings, $427,925; 18 dwellings $400,000. Section 1, Pinewood, 1300 acre addn. 9 mi. west of here.

▲ **Tex., Houston**—HOTEL—Joe Barshop-Holcombe Properties, Inc., c/o Joe Barshop, 1500 S. Zarzamora Ave., San Antonio, plans by Wyatt C. Hedrick, consult. engr.-archt., 5201 Fannin St., 8 or 9 story Ramada Towers Hotel, swimming pool, corner Montclair-Holcombe Blvd., $6,000,000; 250-300 room Motor Hotel, Buffalo Dr., $4,000,000. Ramada Inns of America, lessee.

Tex., Houston—DWELLINGS—Lakewood Building Co., 4034 Grapevine Rd., 27 dwellings, $416,000; 30 dwellings, $428,150, Woodforest Subdivision.

▲ **Tex., Houston**—SHOPPING CENTER—Frank W. Sharp, State Bank Bldg., plans by Sidney H. Morris & Assocs., 134 N. LaSalle St., Chicago, Ill., and Claude E. Hooton, Sr., Herman Professional Bldg., Houston, first unit, 760,000 sq. ft. shopping center, 70 acre tract, Sharpstown, $8,500,000; 10 story office in Sharpstown, near the proposed shopping center, $2,000,000; concrete paved parking area, $300,000. CD 3/16.

Tex., San Antonio—DWELLINGS—G. S. McCreless, Home Builder, 3522 S. New Braunfels Ave., 37 dwellings, $407,000; 34 dwellings, off Goliad Rd., $442,000, off Goliad Rd.

Tex., San Antonio—DWELLINGS—Worth-More Homes, Inc., Builders, 1727 Ave. B, 27 dwellings, $430,000; 24 dwellings, $419,225, Dellview Subdivision.

▲ **Tex., Victoria**—MOTEL INN—A. B. Hammett, c/o Village Shopping Center, Inc., Victoria, Cole Motel Inn. $3,250,000.

▲ **Va., Falls Church**—APARTMENTS—M. J. Matthews & Louis Carusillo, 7403 Baltimore Ave., Takoma Park, Md., two 6 story, 180 unit apartments, $2,000,000.

Va., Hampton—ECONOMICS FACILITY, etc.—Hampton Institute, constr. Home Economics Facility, $500,000; 3 story Dupont Hall wing, $400,000. CD 12/18.

Va., Norfolk—RESIDENCE—Margo Homes, Inc., 7831 Military Highway, ten 2 story residences $400,000.

▲ **Va., Norfolk**—APARTMENT—S. L. Nusbaum, Inc., 148 Granby, 12 story, 348 unit apartment. $5,000,000.

▲ **Va., Norfolk**—APARTMENTS—Owner, c/o Fred T. Stant, Jr., atty., Bd. of Trade Bldg., Norfolk, two 14 story, 346 unit-each apartments. $10,000,000.

Va., Richmond—OFFICES—Owens, Minor & Bodeker, 1000 E. Cary, offices, Staples Mill Rd. $400,000.

▲ **Va., Richmond**—APARTMENTS—Owner, c/o T. T. Hyde, III, 912 E. Main St., 14 story apartment, 300 Block E. Franklin, underground parking. $7,000,000.

Va., Richmond—HOSPITAL—St. Elizabeth's Hospital, 629 W. Grace, hospital and office addn. $400,000.

▲ **Va., Richmond**—APARTMENTS—Willow Lawn Corp., 1726 L St. N.W., Wash., D. C., 11 story, 175-unit apartment. $4,000,000.

▲ **Wash., Spokane** — HOME OFFICE — Lincoln First Federal Savings & Loan Assn., N. 120 Wall St., plans by Whitehouse, Price & DeNeff, Hutton Bldg., home office, $3,500,000.

▲ **Man., Winnipeg**—HOTEL—Ben Zelcovitch, 541 Selkirk, plans by MacLeod & Reimer, 300 Main St., 3 story, bsmnt, hotel, $1,000,000. CD 7/20.

▲ **N. S., Digby**—HOSPITAL—Digby Hospital Planning Comm., Digby, 75 bed hospital addn., $1,000,000.

▲ **Ont., Barrie**—SHOPPING CENTRE—H. Bernicks, c/o Venchiarutti & Venchiarutti, archts. 194 Wilson Ave., Toronto, 200,000 sq. ft. shopping centre, $1,000,000. Spyridon S. Vozoris, 4195 Dundas St. W., Toronto, consult. engrs.

▲ **Ont., North Bay**—HOSPITAL—North Bay Civic Hospital Bd. plans by Agnew Peckham & Assocs., 200 St. Clair Ave. W., Toronto, 100-bed hospital exten. $2,400,000. CD 7/2.

▲ **Ont., Toronto**—HOSPITAL—The Missionary Health Institute, Inc., 325 Sheppard Ave. W., plans by Deacon, Arnett & Murray, 3111 Sheppard Ave. E., 5 story, 115-bed hospital, Sheppard Ave., $1,800,000.

Que., Beauport—MOTEL and RESTAURANT—Jacques Bienvenue, c/o "La Dame Blanche," 252 Blvd. Ste. Anne, plans by Maurice Bouchard, 376 Du Roi St., Quebec City, 25 suite motel, restaurant, $400,000.

Que., Montreal—CHURCH, etc.—La Fabrique de la Paroisse de Notre Dame de la Consolata, 7140 Papineau Ave., plans by Patsy Colangelo, 8259 St. Lawrance Blvd., church superstructure and presbytery, $500,000.

▲ **Que., Quebec City**—SPORTS CENTER—Peres Etudistes, Real Cormier, Superior, c/o Jean-Marie Roy, archts., 3001 Chemin St., sports center near school, $1,000,000. Jodoin, Lamarre, Major & Pratte, 3605 St. Denis St., Montreal, assoc., archts. Leo Dufresne & Roger Mainguy, 915 St. Cyrille St. W., consult. engrs.

INDUSTRIAL BUILDINGS

Ariz., Phoenix—PETROLEUM PRODUCTS TERMINAL—Continental Oil Co., 1300 Main St., Houston, Tex., and Wilshire Oil Co., 727 W. 7 St., Los Angeles, Calif., petroleum products terminal, 5 mi. west of here. $370,000.

Ariz., Tucson—PETROLEUM PRODUCTS TERMINAL—Continental Oil Co., 1300 Main St., Houston, Tex. and Wilshire Oil Co., 727 W. 7 St., Los Angeles, Calif., petroleum products terminal, 5 mi. SE of here. $346,000.

▲ **Calif., Palo Alto**—LABORATORY—Philco Western Development Laboratory, Philco Corp., 3875 Fabian Way, plans by Simpson & Stratta, archts.-engrs., 325 Fifth St., San Francisco, 2 story, 250,000 sq. ft. research and development laboratory, San Antonio Rd. and Bayshore. $4,000,000.

Fla., Miami—PLANT—Seven-Up Bottling Co., 3700 N. Miami Ave., plans by Theodore Gottfried, 844 Biscayne Blvd., 2 story, 100 x 250 CB-S bottling plant, 5901 N.W. 27 Ave. $350,000. Driver & Spooner, 299 Alhambra Circle, Coral Gables, consult. engrs.

Ga., Brunswick—PLANT—Brunswick Pulp & Paper Co., Southern docks, mfg. plant addn. $500,000. H. A. Simons, Ltd., Vancouver, B. C., consult. engr.

▲ **Kan., Topeka**—TIRE PRODUCTION FACILITIES, etc.—Goodyear Tire & Rubber Co., 1144 East Market St., Akron, O., 100 x 350 ft. earthmover tire production facilities plant expansion. $4,000,000. CD 4/15/57.

N. Y., Buffalo—PLANT—Bliss & Laughlin, Inc., 110 Hopkins, Zone 20, plant modernization, incl. 150,000 lb. draw bench, wire straightener and 400 ton horizontal straightening press. $500,000.

▲ **N. C., Goldsboro**—PLANT—Carolina Power & Light Co., 419 Fayetteville, Raleigh, 320,000 hp. steam plant, 600 acres lake for cooling water for plant, dike on Neuse River to maintain lake, $20,000,000.

O., Piqua—FACTORY—Divco Wayne Corp., N. 16th and F Sts., Richmond, Ind., 50,000 sq. ft. factory addn. $500,000.

▲ **O., Shelby** — PLANT — Ohio Seamless Tube, Div. Copperweld Steel Co., Shelby, plant addn., welded tube mill addns. $3,000,000. CD 1/16/55.

▲ **O., West Carrollton**—PLANT—Moraine Paper Co., West Carrollton, plant addn. $12,000,000.

▲ **Pa., Center Square**—LABORATORY—Remington Rand—Univac Division, 19 St. and Allegheny Ave., Phila., plans by The Ballinger Co., 1625 Race St., Phila., 1 story, masonry, steel, and 2 story, 275,000 sq. ft. laboratory and office. $2,500,000. Bids early 1960. CD 11/30/56.

▲ **Pa., Hatboro**—PLANT—Vick Chemical Co., Roberts and Pulaski Aves., Phila., distr. and mfg. plant. $2,000,000. Robert E. Lamb, Inc., 3429 W. Indiana Ave., Phila., archts.-consult. engrs. Bids in February or March 1960. CD 11/24.

S. C., Allendale—PLANT—Fred Whitaker Co., Ridge Ave. and Scotts Lane, plans by John D. Latimer & Assocs., Snow Bldg., Durham, N. C., 75,000 sq. ft. wool scouring plant. $750,000. CD 12/29.

Tenn., Elizabethton—MILL—Beaunit Mills, Inc., knitting mill. $500,000.

Tenn., Selmer—PLANT—Selmer Mfg. Co., shirt mfg. plant. $300,000.

Wash., Dayton—GRAIN ELEVATOR—Columbia Co. Grain Growers, Inc., rein.-con. grain elevator. $450,000. R. Hahn, W. 404 Boone, Spokane, engr. Constr. in Spring.

▲ **Wash., Seattle**—CEMENT STORAGE, etc.—Ideal Cement Co., Denver National Bank, Denver, Colo., cement storage and distribution terminal with six concrete silos, 30 ft. in diam., and 130 ft. high. $2,000,000. Work to begin early next year.

Wis., Kaukauna — FACTORY, etc. — Thilmany Pulp & Paper Co., Kaukauna, plans by Sauter & Seaborne, 125 W. College Ave., Appleton, 47,000 sq. ft. factory and warehouse. $470,000.

▲ **Ont., Maitland**—PLANT—Sogemines Ltd., 1980 Sherbrooke St. W., Montreal, Que., chemical plant to produce ammonium nitrate, nitrogen solutions, anhydrous ammonia and hydrogen, $17,000,000.

UNCLASSIFIED

Calif., Woodland — PARK — Yolo County, Courthouse, $235,000 bond election June 7, Lake Solano Park near Monticello Dam at Lake Solano. $575,000.

Ill., Granite City—PORT FACILITIES—Tri-City Regional Port Dist., c/o City Hall, port facilities, Chain of Rocks canal. Over $500,000.

▲ **New York**—TRANSMISSION LINE—Niagara Mohawk Power Corp., Erie Blvd., Syracuse, 160 mi. 345,000 volt transmission line, substation at Clay and near Utica. $18,000,000.

Oklahoma—RURAL DISTRIBUTION LINES—Northwestern Electric Cooperative, Woodward, 207 mi. rural electric lines, converting 157 mi. existing lines. $616,000. C. H. Guernsey & Co., 2701 N. Oklahoma, Oklahoma City, consult. engrs. CD 11/10/55.

Oklahoma—CRUDE LINES—Service Pipe Line Co., 119 E. 6th St., Tulsa, 43 mi. 2- to 6-in. crude lines, Nowata area, $321,000.

Texas—Oklahoma—GAS LINES—Lone Star Gas Co., 301 S. Harwood St., Dallas, Tex., 37 mi. gas gathering lines, Denton area, $555,000; 7 mi. 10 in. natural gas lateral line, Breckenridge area, $115,000. CD 1/10/56.

Tex., Denton—MARINA—J. K. Hundley, Lake Dallas (via Dallas), marina, incl. 500 boat stalls, ramps, roads, etc., Hickory Creek arm of Garza-Little Elm Reservoir west of Hy. 77, $500,000.

▲ **Ont., Toronto**—PRODUCTION AND ADMINISTRATION CENTER—Canadian Broadcasting Corp., 354 Jarvis St., studios for Radio and TV productions, Production and Administration Center, Eglinton Ave. E., $40,000,000. CD 10/27/59.

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
January 19 Massachusetts January 20 Maine

† **Mass., Falmouth** — RECEIVER AND TRANSMITTER BLDGS.—BA On Or About 2/4—U. S. Eng., 187 Westminster St., Providence, R. I., two approx. 22 x 130 ft., concrete slab, masonry receiver and transmitter bldgs., utilities, site work, Seaward Extension, Otis Air Force Base, ENG-19-016-60-50. $750,000-$900,000. Plans deposit $5. CD 9/9/58.

BUILDINGS—BA

Conn., Branford—SCHOOL, etc.—BA 1/19—St. Mary's R. C. Church, 115 Main St., 2 story, masonry parochial school and convent, Cedar St. $645,000. Polak & Sullivan, 1397 Chapel St., New Haven, archts. Hubbard, Lawless & Blakeley, 110 Whitney Ave., New Haven, engrs. CD 11/4.

† **N. H., Portsmouth**—SCHOOL—BA 1/19—Housing & Home Agency, 346 Broadway, New York, N. Y., elementary school addn., Pease Air Force Base, NH 58-C, Fed. 1-A8. $700,000. Plans deposit $8. Maurice E. Whitmer, 3 Hillside Ave., archt.

HEAVY CONSTRUCTION—LB & CA

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Bids opened 1/5,
Harris Structural Steel Co., 419 Fourth Ave., New York, N. Y., LB $1,320,800, est. $1,400,000, furnish, fabricate and erect structural steel for bridge at Interstate Rte. 495, FA No. 1-495-6(17)81, Contr. 2, Lawrence. CD 12/15.

▲ **M. A. Gammino Constr. Co.**, 728 Valley St., Providence, R.I., LB $1,659,611, aqueduct reservoir, at Cranston, PROVIDENCE, R.I., City, City Hall, Providence, R.I.

BUILDINGS—LB & CA

▲ **Daniel O'Connell's Sons, Inc.**, 480 Hampden St., Holyoke, Mass., CA Approx. $2,500,000, SURBURBAN HOTEL, Chicopee Industrial Center, CHICOPEE, MASS. Schine Enterprises, Gloversville, N. Y. Bids Oct. 12. CD 10/1.

▲ **Middlesex Homes, Inc.**, 1 Russel St., Woburn, Mass., Owner Builds, Approx. $2,000,000, 100 HOUSES "Woodvale" Rte. 62, near 128, Section 28, DANVERS, MASS.

E. H. Porter Co., 13 Wallis, Peabody, Mass., CA Approx. $700,000, SCHOOL addn., GYMNASIUM and CONVENT, Chestnut St., Bradford Section, HAVERHILL, MASS. Sacret Heart R.C. Parish, Chancery Office, 1 Lake St., Brighton, Mass. Bids Oct. 21. CD 10/2.

Walsh Bros., 150 Hampshire St., Cambridge, Mass., LB $949,700, ACADEMY Of The Holy Family, Pelham Rd., LEXINGTON, MASS. Grey Nuns Charities, Inc., Pelham Rd., Lexington, Mass. Bids Dec. 17. CD 12/8.

▲ **A. F. Peaslee, Inc.**, 37 Lewis St., Hartford, Conn., CA $1,467,877, REGIONAL JUNIOR-SENIOR HIGH SCHOOL, Lyons Rd. for Towns of Burlington and Harwinton, BURLINGTON, CONN. Regional School Dist. No. 10, Consolidated School Bldg., Unionville, Conn. Bids Dec. 16, awarded Dec. 31. CD 12/29, under LB.

▲† **Joseph P. Blitz, Inc.**, 545 Madison Ave., New York, N. Y., CA $8,227,000, 500-unit Capehart HOUSING, Submarine Base, GROTON, CONN. Dist. P. Wks., Third Naval Dist., 90 Church St., New York, N. Y. Bids Dec. 22, CD 12/24, under LB.

▲ **City**, City Hall, Boston, Mass., rejected bids Dec. 16, MUNICIPAL AUDITORIUM, Boylston St. at Prudential Center Site, BOSTON, MASS. $10,000,000. Hayle, Doran & Berry, 248 Boylston St., Boston, Mass., archts. Will re-advertise. CD 12/18, under LB.

▲ **Wadhams & May Co.**, 15 Lewis St., Hartford, Conn., CA Approx. $1,500,000, South Catholic HIGH SCHOOL, Campfield Ave., HARTFORD, CONN. Archdiocese of Hartford, Sup.. of Schools, 125 Market St., Hartford, Conn. Bids Dec. 1. CD 11/23.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STAE HIGHWAY LETTINGS
BRIDGES
January 20 New Jersey
STREETS AND ROADS
January 27 New Jersey

▲ **New York and New Jersey**—BA 1/19—Port of New York Auth., 111 Eighth Ave., New York, Zone 11, George Washington Bridge lower level expansion, Phase 5, Contr. GWB-190.028. Extended date. Plans deposit $100. CD 1/21.

▲ **New Jersey**—BA 2/2—U. S. Eng., 2635 Abbottsford Rd., Phila., Pa., dredging Delaware River between Roebling and Newbold Island, Burlington Co. $3,000,-000. Plans deposit $5. CD 9/29, under Pennsylvania and New Jersey.

▲ **N. Y., Rochester**—BA 2/16—City, Purchasing Agent, Rm. 36, City Hall, No. 20 South Fitzhugh St., Zone 14, Contr. 3A, general contract, Contr. 3B, piping equip. and plumbing, Contr. 3C, electrical constr., Contr. 3D, heating and ventilating Main Sewage Treatment Plant addns., Stage 3, sludge digestion, grit and screenings handling facilities. Plans deposit $100. Nussbaumer, Clarke & Velzy, 327 Franklin St., Buffalo, Zone 2, consult. engrs. CD 3/20/56.

BUILDINGS—BA

Pa., Forest City—SCHOOL—BA 1/28—Pa. P. School Bldg. Auth., 101 S. 25 St., Harrisburg, secondary school for Forest City Joint School Bd., Proj. 809-635. $799,950. Plans deposit $50. R. P. Moran & Assocs., Medical Arts Bldg., Scranton, archts. CD 5/2/58.

▲ **N. Y., Stony Brook**—HUMANITIES, etc.—BA 2/24—Henry A. Cohen, dir. Bureau Contracts, Dpt. P. Wks., State Office Bldg., Albany, general contract, heating, sanitary, electric, elevator work, laboratory equipment for humanities, chemistry, service and heating plant buildings, to incl. service connections and imprvs. grounds for State University College on Long Island. Plans deposit $50 general, $40 each heating and electric, $30 each sanitary and laboratory equip. and $15 elevator. CD 3/26/57.

HEAVY CONSTRUCTION—LB & CA

▲ **Frederick Snare Corp.**, 233 Broadway, New York 7, N. Y., LB $2,717,796 (9 bidders), deck constr. Pier 7, Brooklyn-Port Authority Piers, Contr. BP-180.001, BROOKLYN, N. Y. Port of New York Auth., Rm. 1100, 111 Eighth Ave., New York 11, N. Y. Bids Dec. 18. CD 12/14.

▲ **Horn Constr. Co.**, 2174 Hewlett Ave., Merrick, N. Y., CA $2,147,538, replacement of contact rails, Jerome Avenue Line, south of 167th Street Station to Woodlawn Station; IRT Division, Contr. T-136, Bronx Boro, NEW YORK, N. Y. New York City Transit Auth., 370 Jay St., Brooklyn 1, N. Y. Bids Dec. 11. CD 12/14, under LB.

▲ **Karl Koch Erecting Co., Inc.**, 362 Casanova St., New York 59, N. Y., LB $6,384,000 (14 bidders), Manhattan Bridge Imprvs., Contr. No. 10, reconstr. upper deck roadways, repairs to lower deck in connection with conversion of upper roadways to mixed traffic, imprv. bridge approach grades and connections to Lower Manhattan Expressway, NEW YORK, N. Y. Dpt. P. Wks., Rm. 2200, Municipal Bldg., New York 7, N. Y. Bids Jan. 6. CD 12/29.

▲† **L. Roseman Corp.**, 112 4th Ave., New York, N. Y., LB $1,542,000 (35 bidders), airconditioning postal aeras, Federal-Office Bldg., Vesey St. (90 Church St.), NEW YORK, N. Y. Business Service Center, General Services Administration, 250 Hudson St., New York 13, N. Y. Bids Dec. 29. CD 12/11.

▲ **NEW JERSEY**—State Hy. Opt., 1035 Parkway Ave., Trenton, Bids opened 1/5,
Public Constructors, Inc., P.O. Box 34, Blackwood, N. J., LB $3,116,053, (10 bidders), extending Interstate Rte. 295, 1.7 mi. from Rte. 47 (Delsea Dr.) in Westville to Hessian Ave. in West Deptford Twp., Gloucester Co. CD 12/17.

▲ **Carl E. Widell & Sons, Inc.**, Haddonfield Rd., Merchantville, N. J., CA $1,482,000, water treatment plant and water supply imprvs., CAMDEN, N. J. City, City Hall, Camden, N. J. Bids Dec. 17. CD 11/25.

▲ **PENNSYLVANIA**—Pa. Hy. & Bridge Auth., 506 Office Bldg., Harrisburg,
J. H. Beers, Inc., R.D. 2, Bangor, Pa., CA $3,765,539, 4-lane divided highway with broad divisor, several bridges and ramps, 2.75 mi. to connect the limited access with existing roads and borough streets, second section of Stroudsburg By-Pass, Monroe Co. Bids Oct. 29. CD 11/4, under LB.

▲ **Berlanti Constr. Co.**, 15 Oakland Ave., Harrison, N. Y., CA $1,405,873, sanitary sewers, Contract 1, EAST GREENVILLE, PA. Upper Montgomery Joint Auth., East Greenville, Pa. Albright & Friel, Inc., 3 Penn Center Plaza, Phila., Pa., engr. CD 3/20/47;
William H. Gill Jr., Inc., Primos, Pa., CA $572,617, 3 sewage pumping stations and sewage treatment works, Contract 2, (East Greenville, Pa.).

John Meehan & Son, 9301 Krewstown Rd., Phila. 15, Pa., CA $215,271, Bid 2457, grading, bridge and sewer Dr. R/W and Pennypack Park N.W. of intersection Norvelt Dr. and Alpena Rd. to Paul's Run intercepting sewer and stream, etc.; CA $205,936, Bid No. 3458, reconstruction sewer and relay water mains in Germantown Ave. from 19 ft. plus West of Hancock St. to West House Line of 2nd St., PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa. Grand total $564,390. Bids Dec. 22. CD 12/10;
D. & C. Spinosa Co., 2-8 N. Jerome St., Allentown, Pa., CA $143,184, Bid 2459, sewers Valley Ave. from point 185 ft. N.W. of Hill Rd. to Wigard Ave. (Phila., Pa.).

▲ **MARYLAND**—State Rds. Comn., 300 W. Preston St., Baltimore, Zone 2,
Burkholder & Burkholder, Winchester, Va., CA $1,972,-470, grade, drain, surf. 5.957 mi. US 40 in Hagerstown. Contr. W-428-2-620, Washington Co. Bids Nov. 17. CD 11/29, under LB.

▲ **MARYLAND**—State Rds. Comn., 300 W. Preston St., Baltimore, Zone 3, Bids opened 12/22,
Williams Constr. Co., P.O. Box 5045, Baltimore, Md., LB $2,967,775 (9 bidders), 5.202 mi. roadway, part of Northeastern Expressway, incl. 14 span steel beam bridge, three 3-span steel beam bridges, 5 double box culverts and 4 single box culverts north of Baltimore, Contr. B-635-9-46-80-112-320, Baltimore Co. CD 12/16.

† **Merando, Inc.**, 4098 Minnesota Ave. N.E., Wash., D. C., CA $594,353, N.C.O. open mess, ENG-49-080-60-2(2), ANDREWS AIR FORCE BASE, MD. U. S. Eng., First and Douglas Sts. N.W., Wash. 25, D. C. Bids Dec. 16. CD 12/23, under LB.

▲† **Security Constr. Co.**, 8903 Allendale Rd., Richmond, Va., CA $1,941,500, aircraft maintenance facilities, NAS and NASVR bldgs., John H. Towers Field, ANDREWS AIR FORCE BASE, MD. U. S. Eng., First and Douglas Sts. N.W., Wash. 25, D. C. CD 12/18, under LB.

† **Arthur Venneri Co.**, 1906 K St. N.W., Wash., D. C., CA $710,800, supply facilities, John H. Towers Field, ENG-49-080-60-23-(25), ANDREWS AIR FORCE BASE, MD. U. S. Eng., First and Douglas Sts. N.W., Wash. 25, D. C. Bids Dec. 15. CD 12/23, under LB.

BUILDINGS—LB & CA

▲ **H.R.H. Constr. Corp.**, 579 Fifth Ave., New York 17, N. Y., CA Est. $22,682,000, H-shaped, 25 story center bar, 22 story wings, 1,317 families HOUSING, Ebbets Field site, Sullivan St., Bedford Ave., Montgomery St., McKeever Pl., BROOKLYN, N. Y. Field Housing Co., Inc., c/o Marvin Kratter, 521 Fifth Ave., New York 17, N. Y. Brown & Guenther, 1860 Broadway, New York 23, N. Y., archts.

John T. Brady & Co., Inc., 606 W. 47th St., New York 19, N. Y., LB $992,000 (13 bidders), general contract CHILDREN'S COURT and PROBATION DEPARTMENT BLDG., EAST MEADOW, N. Y. Bd. Supervs. Nassau County, Old County Court, Mineola, N. Y. Bids Dec. 22. CD 12/16.

▲ **Gevyn Constr. Corp.**, 10-29 Clintonville St., Whitestone 57, N. Y., CA Est. $1,000,000, 1 story, 120,-000 sq. ft. steel, concrete SHOPPING CENTER, Rockaway Turnpike and Peninsula Blvd., LAWRENCE, N. Y. Rockaway Peninsula Corp., 606 Rockaway Turnpike, North Lawrence, N. Y. B. Goldfab, 44 W. 56th St., New York, N. Y., archt.

▲ **Castagna & Son, Inc.**, 2110 Northern Blvd., Manhasset, N. Y., CA $1,896,333, general contract 5 story Nassau County EXECUTIVE OFFICE, West St., MINEOLA, N. Y. Nassau Co. Dpt. P. Wks., Old County Court House, Mineola, N. Y. Bids Dec. 1. CD 12/3, under LB.

C. Guy Ross & Son, 715 Market St., Mount Ephraim, N. J., CA $900,000, 60-unit MOTEL, CONVENTION HALL, OFFICE, BELLMAWR, N. J. Black Horse Inn Motel, c/o Tannenbaum & Milask, 712 Federal St., Camden, N. J. CD 11/24.

Damon G. Douglas Co., 605 Broad St., Newark, N. J., LB $700,000, 3 story YMCA-YWCA addn., 600 Broad St., NEWARK, N. J. Young Men's Christian Assn., 600 Broad St., Newark, N. J. Emil Schmidlin, 50 Evergreen Ave. E., Orange, N. J., archt. CD 2/10.

Fred J. Brotherton, Inc., 185 Atlantic St., Hackensack, N. J., CA $800,000, est. $700,000, 3 story, brick, tile SCHOOL, N. 7th between Abington and Berkeley Aves., NEWARK, N. J. Diocese of Newark, Parish St. Francis Xavier, 243 Abington Ave., Newark, N. J. CD 9/24.

▲ **Belli Co.**, 2127 Hamilton Ave., Trenton, N. J., LB $1,992,000 (6 bidders), general contract two JUNIOR HIGH SCHOOLS, one on White Horse-Hamilton Square Rd., the other on Yardville-Hamilton Square Rd., Hamilton Twp., Mercer Co., TRENTON, N. J. Hamilton Twp. Bd. Educ., 2069 Greenwood Ave., Trenton, N. J. Bids Jan. 5. CD 12/24.

▲ **Jos. Veteri**, c/o Martin Mandon, 175 Market St., Paterson, N. J., Owner Builds, $3,500,000, 144 HOUSES, Preakness Hills and Valley Rd., WAYNE, N. J.

Excel Building Corp., c/o **Kruvant Asso.**, 79 Lincoln Park, Newark, N. J., Owner Builds, $600,000, 27 HOUSES, Larchmont Rd., WOODBRIDGE, N. J. Thomas Carr, 313 State St., Perth Amboy, N. J., engr.

Nathan Kaplan, 267 South 11th St., Highland Park, N. J., Owner Builds, $750,000, 20 HOUSES, 2nd section, off Fords Ave., WOODBRIDGE, N. J. Howard Madison, 20 Ford Ave., Fords, N. J., engr.

▲ **American Machine & Metals, Inc.**, Sellersville, Pa., Separate Contracts, $3,500,000, MFG. PLANT, 86 acre tract, HATFIELD, PA. CD 1/6.

▲ **Turner Constr. Co.**, 150 E. 42 St., New York 17, N. Y., CA RESEARCH and DEVELOPMENT CENTER, at Merwin, PITTSBURGH, PA. Aluminum Co. of America, Alco Bldg., Pittsburgh, Pa. CD 9/15.

▲ **Wilputte Coke Oven Division, Allied Chemical Corp.**, 40 Rector, New York, N. Y., CA $9,500,000, battery by-product COKE OVENS, incl. 118 smokeless type ovens at Pittsburgh Works, PITTSBURGH, PA. Jones & Laughlin Steel Corp., 3 Gateway Center, Pittsburgh 30, Pa.

George Pasfield, Inc., Haverford, Pa., Separate Contracts, $750,000, RESIDENTIAL DEVELOPMENTS (60), Bensalem Twp. Street Rd., TREVOSE, PA.

H C H Constr. Co., 617 S. 52 St., Phila., Pa., Separate Contracts, $600,000, 5 garden type APARTMENTS, Providence Rd., etc., WALLINGFORD, PA. George M. Ewing Co., Room 1720, Western Savings Fund Bldg., Phila., Pa., archt.

Consolidated Eng. Co., 20 E. Franklin St., Baltimore 2, Md., LB $663,000 (3 bidders), 3 story, brick, concrete, steel BIOPHYSICS BLDG., BALTIMORE, MD. Johns Hopkins Hospital, Broadway and Monument St., Baltimore, Md. Bids Nov. 13. CD 10/28.

▲ **Armiger Constr. Corp.**, 1721 Lamont Ave., Baltimore, Md., CA $1,000,000, 200x900 ft. masonry, tile, etc. WAREHOUSE (conversion to Bakery), 230 N. Franklintown Rd., BALTIMORE, MD. Great Atlantic & Pacific Tea Co., Graybar Bldg., New York, N. Y.

▲ **Steiner Constr. Co.**, 2122 Maryland Ave., Baltimore 18, Md., CA $1,064,000, 3 story, brick, concrete, steel Kernan HOSPITAL alterations, addns., BALTI-

(Continued on page 98)

NOW! FOUR NEW MOTOR GRADERS

that will put you out front for the BIG JOBS in the 60's

BIGGER · HEAVIER · STRONGER

ECONOMICAL TO OPERATE AND MAINTAIN · CONSTANT MESH TRANSMISSION

NEW MODELS	8-D	9-D	10-D	11-D
HORSEPOWER	83	100	125	160

PEAK PERFORMANCE AND ECONOMY FEATURES THAT PUT THESE MODELS OUT FRONT!

see Huber-Warco for the finest in grading and rolling equipment

HUBER-WARCO COMPANY

Single member frame designed to absorb heaviest shocks and strains. High arch design improves visibility, provides more room to maneuver blade.

Ruggedly built circle with three big wearing shoes. Designed to protect gear teeth from all loads except turning force.

Circle turn completely gear driven.

Weight where it counts. Two-thirds of machine weight on drive wheels.

Easy, positive steering with hydraulic booster activated by six pounds' hand pressure.

90-degree blade control on either side without leaving cab.

360-degree blade rotation without removing scarifier teeth.

Power sliding moldboard, optional, for faster work around abutments, stakes, and other obstructions.

Full-floating rear axle carries no machine weight.

Large, roomy deck with all controls within easy reach.

Deluxe cab, optional, has 18% more glass for greater visibility.

Six speeds forward and reverse; optional creeper gear adds three more speeds in each direction.

Moving one lever changes direction in same gear.

Other constant mesh transmission features include (1) easy shifting, including range shift, at all speeds (2) shift rails interlocked to prevent multiple engagement (3) pressure flood lubrication (4) ball and tapered roller bearings throughout transmission and final drive (5) helical transmission gears for quiet operation (6) machine-cut, case-hardened alloy steel transmission shafts and gears.

HUBER

WARCO

MARION, OHIO
U. S. A.

TANDEM ROLLERS

MAINTAINER

3 WHEEL ROLLERS

(Continued from page 95)

MORE, MD. Kernan Hospital, Inc., Forest Park and Windsor Mill Rd., Woodlawn, Md. Jas R. Edmunds, Jr., 1025 St. Paul St., Baltimore 2, Md., archt. CD 11/16, under LB.

▲ **Boardman-Smith Corp.**, Charles and Passmore Sts., Phila., Pa., Separate Contracts, $2,500,000, RESIDENTIAL DEVELOPMENT, Sycamore Gardens, NEWARK, DEL. Dante D'Anastasio, 1815 Federal St., Phila., Pa., archt.

▲ **Devonshire Homes, Inc.**, 2311 Concord Pike, Wilmington, Del., Separate Contracts, $2,000,000, 125-unit RESIDENTIAL DEVELOPMENT, Catalina Gardens; $450,000, 20-unit RESIDENTIAL DEVELOPMENT, Westerloo, WILMINGTON, DEL.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

January 22 Tennessee

STREETS AND ROADS

January 22 Tennessee January 27 Louisiana

▲ **N. C., Concord**—BA 1/28—City, City Hall, sewage treatment plant, outfall sewers. $2,000,000. J. N. Pease & Co., P.O. Box 10336, Charlotte, engrs. CD 12/31/58.

▲ **N. C., High Point**—BA 2/24—City, City Hall, 83,000 lin. ft. sewer outfall lines. $1,000,000. William F. Freeman, Inc., 116 E. Commerce St., engr. CD 2/10.

▲† **Florida**—BA About 3/8—U. S. Eng., P.O. Box 4970, Jacksonville, Zone 1, dredging 9-ft. project, excavation unclassified (Caloosahatchee River to Little Gasparilla Pass), Items 1, 1,328,000 cu. yd., excavation unclassified (Little Gasparilla Pass to Alligator Creek), item 2, 2,551,000 cu. yd., Caloosahatchee River to Alligator Creek Intracoastal Waterway, Caloosahatchee River to Anclote River, CIVENG-08-123-60-32. CD 9/29.

BUILDINGS—BA

▲ **La., New Orleans**—COFFEE PLANT—BA 1/20—J. A. Folger Coffee Co., 330 W. 8th, Kansas City, Mo., 1 story, mezzanine, 198,000 sq. ft rein.-con., structural steel, brick tile, etc. coffee plant. Extended date. Plans deposit $50. August Perez & Assn., 314 Audubon Bldg., archts. CD 12/21.

▲ **Ga., Atlanta**—APARTMENT—BA 1/26—Valley Park Apartments, c/o Dobbs & Co., Forsyth Bldg., apartment. $1,500,000. Plans deposit $50. Heery & Heery, 1722 Peachtree St. N.E., archts.

▲ **Ga., Decatur**—SCHOOL—BA 1/26—DeKalb Co. Bd. Educ., DeKalb Bldg., 120,000 sq. ft. Briarcliff High School addn. $1,300,000. Plans deposit $100. Bodin & Lamberson, 827 Forsyth Bldg., Atlanta, archts. CD 7/7.

Ga., Valdosta—HOUSING—BA 1/26—Valdosta Housing Auth., 610 E. Ann St., 70 housing units, Project GA 100-6. $700,000. Plans deposit $50. Joe E. Bright, Ritz Theater Bldg., and Felton Davis, 1501 Slater St., archts. CD 11/13.

N. C., Lincolnton—SCHOOL—BA 1/26—Lincoln Co. Bd. Educ., Courthouse, 64,000 sq. ft. West Lincoln High School. $600,000. Plans deposit $75. Clemmer & Horton, 226 Second St. S.W., Hickory, archts. CD 7/3.

▲ **Ga., Atlanta** — NURSES' TRAINING SCHOOL — BA 1/28—Piedmont Hospital, 1968 Peachtree Rd. N.W., nurses' training school and dormitory. $1,500,000. Saggus, Williams, Vaught & Spiker, 739 W. Peachtree St. N.W., archts. CD 11/9.

▲ **Fla., Miami**—CRIMINAL COURTS—BA 2/2—Bd. Comrs. Dade Co., Courthouse, criminal courts. Plans deposit $200. Coda Assocs., 206 Roper Bldg., archts. Bliss Engineering Co., Inc., 1370 Washington Ave., Miami Beach, structural engr. Sasnett Engineering Co., Inc., DuPont Plaza Center, mechanical engr. CD 12/30, under LB.

▲ **Ga., Atlanta**—CATHEDRAL—BA 2/11—St. Phillip's Episcopal Church, 2744 Peachtree Rd. N.E., Atlanta, cathedral. $1,500,000. Plans deposit $150. Francis P. Smith, Whitehead Bldg., and Ayers & Goodwin, Bona Allen Bldg., archts. CD 7/22.

▲† **Tenn., Oak Ridge**—METALS and CERAMICS FACILITIES—BA About 2/25—Atomic Energy Comn., P.O. Box E, metals and ceramics facilities in X-10 Area, Inv. No. 401-60-12A. CD 3/25.

HEAVY CONSTRUCTION—LB & CA

Forcum-Lamon, Inc., Dyersburg, Tenn., CA $795,650, Contract B, sanitary sewer imprvs., Camp Creek, Sections 1 and 2, ATLANTA, GA. Comrs. Fulton Co., 165 Central Ave. S.W., Atlanta, Ga. Bids Nov. 18. CD 11/25, under LB.

▲ **LOUISIANA** State Dpt. Hys., Rm. 426, Headquarters Admin. Bldg., Baton Rouge,

Nichols-Southern Div., (div. Yuba Consolidated Industries, Inc.), 2864 Airline Hy., Baton Rouge, La., CA $7,137,-201, c. conc. pavt., grade separation structures, etc. 1.192 mi. Shreveport Expressway (Allen Ave.-Spring St.) Rte. 1-20 SP 451-01-07 FAP 1-20-1(17), Caddo Parish. Bids Nov. 18. CD 11/24, under LB.

BUILDINGS—LB & CA

Durham Plumbing & Heating Co., 310 S. Dillard St., Durham, N. C., CA $526,898, heating, ventilating air conditioning, BIOLOGICAL SCIENCE BLDG., DURHAM, N. C. Duke University, Admin. Bldg., Durham, N. C. Bids Dec. 15. CD 12/24, under LB.

▲ **Wagoner Constr. Co.**, 1311 Blair St., Salisbury, N. C., CA $2,500,000, MOTOR HOTEL, RESTAURANT and FURNITURE DISPLAY CENTER, HIGH POINT, N. C. Arthur Corpening, Sheraton Hotel, High Point, N. C. CD 10/22.

E. N. Richards, 705 Georgetown Rd., Raleigh, N. C., Day Labor, $750,000, 100 RESIDENCES, RALEIGH, N. C. CD 9/4/56.

Wachovia Bldg. Co., 705 Georgetown Rd., Raleigh, N. C., Day Labor, $800,000, 77 RESIDENCES, RALEIGH, N. C.

Mathis Constr. Co., Box 1106, Athens, Ga., CA $772,234, visual ARTS UNITS, Fine Arts Center, ATHENS, GA. University System of Georgia, Bd. Regents, 244 Washington St. S.W., Atlanta, Ga. Bids Dec. 17, awarded Dec. 22, CD 12/24, under LB.

▲ **F. H. Kilgore, Jr.**, 2115 Norfolk St., Houston, Tex., CA $1,100,000, 80,000 sq. ft. APARTMENT, DECATUR, GA. The Military Corp., Hurt Bldg., Atlanta, Ga.

Fairfield Development, Inc., 4165 Dellwood Dr., Macon, Ga., Day Labor, $650,000, 45 RESIDENCES, Houston Rd., MACON, GA.

▲ **Fred Howland, Inc., Contrs.**, 1145 NW 20 St., Miami, Fla., CA $1,000,000, BANK and OFFICE 2765 South Bayshore Dr., MIAMI, FLA. 2765 South Bayshore Corp., 3430 Main Highway, Miami, Fla. CD 10/7.

John H. Rice, 801 NE 81 St., Miami, Fla., CA Approx. $900,000, 120 RESIDENCES, vicinity of 44 Ave. and 193 St., MIAMI, FLA. Willard Woodrow Constr. Co., 801 NE 81 St., Miami, Fla. Gamble, Pownall & Gilroy, 1407 E. Las Olas Blvd., Fort Lauderdale, Fla., archts.

Standard Engineering Co., 317 Wallace Ave., Louisville 7, Ky., LB $529,000, plumbing and heating for HOSPITAL addn., LOUISVILLE, KY. Jewish Hospital, 217 E. Chestnut St., Louisville, Ky. Bids Dec. 30. CD 12/4.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

January 26 Indiana & Kentucky

▲ **Mich., Detroit**—BA 2/16—At Office M. F. Wagnitz, city engr., 528 City-County Bldg., Zone 26, Contr. PW-3023R, sewer and alterations to existing pumping stat'on Northwest Interceptor, River Rouge Section, for City. Plans deposit $25. CD 4/22, under LB.

HEAVY CONSTRUCTION—LB & CA

▲ **OHIO**—State Hy. Dpt., State Dept. Bldg., Columbus, O.—**The Horvitz Co.**, 4375 E. 146th St., Cleveland, O., CA $3,869,883, Type T-71 and structures 1.969 mi. Section 22.97, ACI 90-1(15) 10 (new), I-329(12) (old) City of Cleveland, Village of Bratenahl, S.R. 2, Proj. 572, Cuyahoga Co.;
O.—**V. N. Holderman & Sons Co.**, 890 Oakland Park Ave., Columbus, O., CA $2,116,856, Type T-71 and structure 0.099 mi. S.R. 1, Section 23.78, I-71-3 (21) 110. City of Columbus, Proj. 573, Franklin Co.;
O.—**A. J. Baltes, Inc.**, 11 Olive St., Norwalk, O., CA $3,998,231, Type T-71 and structures USR 25, Section 4.17, ACI 75-1(33) 44, S-SG-308(4), Miami Twp. Village of West Carrollton, Proj. 574, Montgomery Co. Grand total $9,984,970. Bids Dec. 18. CD 12/29, under LB.

▲ **OHIO**—Opt. Hys., State Depts. Bldg., Columbus, Zone 15,
O.—**Bates & Rogers Constr. Corp.**, 600 W. Jackson Blvd., Chicago, Ill., CA $1,297,377, est. $1,321,000, Type T-71 and structures SR 14, Section 5.50, U-UG-484 (2) City of Cleveland, Proj. 561, Cuyahoga Co.; CA $640,080, est. $748,000, Type T-35 on B-219 and structure SR 55, Sections (11.53-11.78) US 369 (4), City of Troy, Proj. 566, Miami Co.;
O.—**V. N. Holderman & Sons Co.**, 890 Oakland Park Ave., Columbus, O., CA $4,307,975, est. $4,871,300, Type T-71 and structures SR 1, Sections (23.72) (23.88) SR 3 Section 18.36 I-71-3 (18) 110, I-1105 (15) Old, City of Columbus Proj. 562, Franklin Co.;
O.—**Foley Constr. Co.**, 5050 Orchard St., Cincinnati, O., CA $4,224,090, est. $4,456,600, Type T-71 and structures USR 50, Sections (29.13) (29.83) U-UG-582 (14) US-730 (9), City of Cincinnati and Village of Fairfax, Proj. 563, Hamilton Co.;
O.—**Fischer Constr. Co.**, 10147 Springfield Pike, Cincinnati, O., CA $1,845,973, est. $2,193,100, Type T-71 and structures USR 52, Section 0.00, ACI 74-1 (2) 00, I-1104 (2) Old) Village of Harrison, Proj. 564, Hamilton Co.;
O.—**The Lathrop Co. & The Pierce Constr. Co.**, P.O. Box 772, Toledo, O., CA $6,657,355, est. $7,026,-600, Type T-71 and structures, SR 2, Section 0.00 (Cuyahoga County, City of Euclid) U-329 (14) Cities of Euclid, Wickliffe, Willowwick, Eastlake and Willoughby, Proj. 565, Lake Co.;
O.—**National Engineering & Contg. Co.**, 1968 W. 3rd St., Cleveland, O., CA $2,706,731, est. $2,913,500, Type T-71 and structures, SR 18 Section 11.00, ACI 4 (6) 122, City of Akron, Proj. 567, Summit Co.;
O.—**Hatcher Bros., Inc.**, 2002 S. Commercial St., Mingo Junction, O., CA $3,663,011, est. $4,675,800, Type T-71, structures USR 22, Section 15.09, Cadiz and Archer Twps., Proj. 569, Harrison Co.;
O.—**Soda & Luscher Constr. Co.**, Niles, O., CA $670,-562, est. $708,700, Type T-35, SR 90, Sections (3.46-6.49) S-495 (2), Liberty and Vienna Twps, Proj. 568, Trumbull Co. Grand total $26,013,154. Bids Dec. 15. CD 12/23.

▲ **Dandrea & Nardini Constr. Co.**, 21st St. and B. & O. R.R., Lorain, O., CA $786,000, sewerage sys. treatment plant, AVON LAKE, O. Village, Village Hall, Avon Lake, O. Bids Nov. 24, awarded Dec. 28. CD 1/6, under LB;
National Constr. Co., 23500 Lakeland Blvd., Cleveland 23, O., CA $745,000, sewerage sys. easterly interceptor. CD 12/24, under LB. (Avon Lake, O.).

▲ **Don King Constr. Co.**, Jackson, O., and **C. Ray Sykes Co.**, 209 S. 3rd St., Columbus, O., CA $942,426, sewage treatment sys., sewage treatment plant, NILES, O City, City Hall, Niles, O. Bids Nov. 24, awarded Dec. 30. CD 12/2, under LB;
Al Monzo Constr. Co., Monroeville, Pa., CA $1,297,-777, sewage treatment sys., interceptor sewer from Robbins Ave. and Mosquito Creek through East End to treatment plant (Niles, O.).

▲ **Tarlton Constr Co.**, 5500 West Park, St. Louis, Mo., LB $1,341,182 (10 bidders), sewage treatment plant, NORTH OLMSTED, O. City, 25158 Lorain Rd. N., Olmsted, O. Floyd G. Browne & Assocs., P.O. Box 510, Marion, O., engrs. Bids Dec. 3. CD 11/19.

▲ **Bd. Comrs.** Lucas County, Courthouse, Toledo, O. Own Forces, $1,100,000, road maintenance program, TOLEDO, O. CD 5/11/50.

Bd. Comrs. Lucas Co., Courthouse, Toledo, O., rejected bids Dec. 22, Sanitary Sewers No. 49, Section G locals, Washington Twp., Area A, $516,905; Sanitary Sewer No. 49, Section G locals, Area B, $371,690, TOLEDO, O. Will re-advertise. CD 12/31, under LB.

▲ **Paschen Contractors, Inc.**, 279 Elston Ave., Chicago, Ill., LB $3,898,090, No. 80.391-59-3, Contr. B, Central Dist. Filtration Plant headhouse substructure, CHICAGO, ILL. Dpt. Purchases, City Hall, Chicago 2, IH. Bids Jan. 5. CD 12/4.

▲ **E. A. Meyer Constr. Co.**, Skokie Rd., Waukegan, Ill. CA $2,500,000, ship terminal, warehouse, two silos, WAUKEGAN, ILL. City, City Hall, Waukegan, Ill. CD 12/18.

BUILDINGS—LB & CA

▲ **Tousley Constr. Co.**, 925 E. St. Clair St., Indianapolis, Ind., CA $2,714,000, general contract HIGH SCHOOL, to be called Arlington School, 1,500-seat auditorium, Arlington St., north of 46th St., INDIANAPOLIS, IND. School Bd., 150 N. Meridian St., Indianapolis, Ind. Bids Dec. 8, awarded Dec. 29. Grand total $4,080,240. CD 11/10.
Hayes Bros., Inc., 236 W. Vermont St., Indianapolis, Ind., CA $912,040, plumbing, heating and ventilating (Indianapolis, Ind.);
Sanborn Electric Co., 311 N. Illinois St., Indianapolis, Ind., CA $454,200, electrical work (Indianapolis, Ind.)

▲ **Thorp Constr. Co.**, P.O. Box 22, Evansville, Ind., LB $1,790,000 (6 bidders), HOSPITAL, Gibson Co., PRINCETON, IND. Gibson Hospital, Princeton, Ind. Bids Dec. 22. CD 12/1.

▲ **Fruin-Colnon Contg. Co.**, 1706 Olive, St. Louis, Mo., and **S. M. Wilson & Co.**, 1616 Cleveland, Granite City, Ill., LB $7,288,443, Base Plan A or $7,267,-148, Base Plan B, est. $7,500,000 (3 bidders) East St. Louis HOUSING, EAST ST. LOUIS, ILL. East St. Louis Housing Authority, 810 Spivey Bldg., East St. Louis, Ill. Bids Jan. 5. CD 11/24.

▲ **Power Constr. Co., Inc.**, 125 S. Marion St., Oak Park, Ill., CA $1,550,800, Olympia Field HIGH SCHOOL, well and paving, HOMEWOOD, ILL. Rich Twp. High School Dist. 227, Sauk Trail, Park Forest, Ill. Bids Nov. 30. CD 12/24, under LB.

MISSISSIPPI TO ROCKIES

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

January 29 Missouri

STREETS AND ROADS

January 21 Kansas January 22 Minnesota
January 29 Missouri

▲ **Tex., Fort Worth**—HANGAR, etc.—BA 3/1—At office L. P. Cookingham, city mgr., City Hall, design, build and net-lease hangar and office facilities, Meacham Field. Plans deposit $5. CD 12/3.

BUILDINGS—BA

▲ **Tex., Waco**—HIGH SCHOOL—BA 1/21—Waco Ind. School Dist., 150,000 sq. ft., brick Senior High School. $1,700,000. Spicer, Bush & Witt, 2125 Austin Ave., Waco and Yandell, Cowan & Love, Fort Worth National Bank Bldg., Fort Worth, archts.-engrs. CD 4/23.

Mo., Dexter—SCHOOL—BA 1/27—Dexter P. Schools Bd. Educ., brick, glazed Senior High School. Over $700,000. Plans deposit $25. Wm. B. Ittner, Inc., 911 Locust St., St. Louis, Zone 1, archt.-engr. CD 4/2.

▲ **Wyo., Laramie**—DORMITORY—BA 2/5—University of Wyoming, 4 story, bsmnt., 19,000 sq. ft., stone, brick girl's dormitory, $1,325,000. Porter & Porter, 1009 E. Lincolnway, Cheyenne, archts. Volk & Harrison, 2305 Oxford Lane, Casper, engrs. CD 5/13.

▲† **Tex., El Paso**—MOTOR PARKS—BA On Or About 2/11—U. S. Eng., Box 1538, Albuquerque, N. M., facilities for 4 BN Motor Parks, Fort Bliss, ENG-29-005-60-20. $1,000,000. CD 9/25.

Mont., Bozeman—VETERINARY RESEARCH LABORATORY—BA 2/17—State Bd. Examiners, Helena, three

(Continued on page 100)

BIGGEST DRILLING NEWS IN AGES...

V-R

New V-R percussion bits

HOLD GAUGE LONGER!

for Bottoming Drive Rods

for Shoulder Drive Rods

for Push-on Rods

YOU CAN SEE THE QUALITY

V-R Percussion Bits are supplied unpainted so you can see the quality before you put the bit in the hole.

NEW...

CARBIDES . . . greater impact and abrasion resistance . . . the result of 30 years of carbide experience.

BODIES . . . exclusive fatigue resisting alloy steel, controlled heat treating and precision machined threads prevent ring-off and bit loss.

ENGINEERING . . . every bit is especially engineered for faster penetration, longer life and holding gauge longer on tough drilling jobs.

MANUFACTURING . . . V-R manufactures complete bits . . . including the manufacture of the carbide from the ore to the finished product . . . your assurance of consistent quality.

Carbide specially engineered for percussion drilling is the reason why new V-R Percussion bits hold gauge longer. 30 years of V-R carbide research and manufacturing experience have enabled V-R to develop this new standard of drilling performance.

Leading contractors, construction engineers and mining engineers have given their complete cooperation in the most exhaustive on-the-job field testing program in drilling history. These tests prove that new V-R Percussion Bits will hold gauge longer, penetrate faster and give more footage per bit on any drilling job.

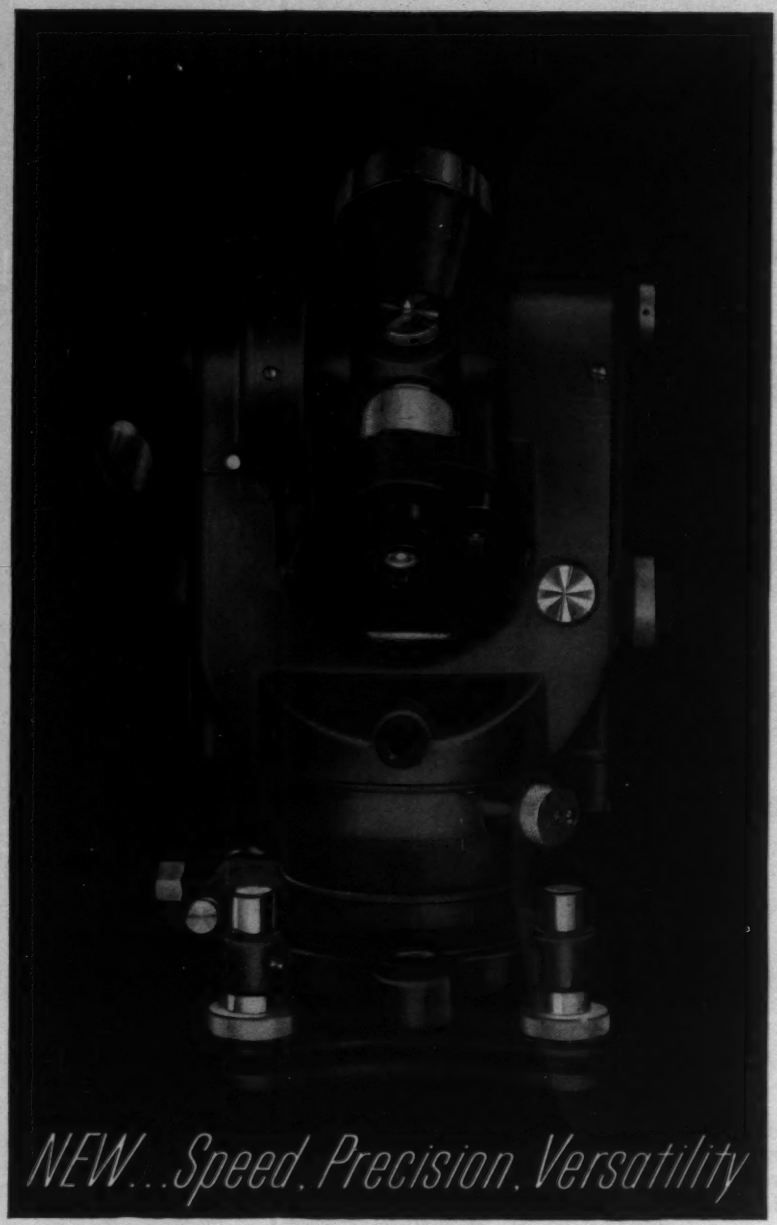
Now these fast, rugged bits are ready to go to work for you. Contact your nearest V-R representative or write for complete information.

CREATING THE METALS THAT SHAPE THE FUTURE

V-R VASCOLOY-RAMET

M-767

802 MARKET STREET • WAUKEGAN, ILLINOIS



WILD T-1A OPTICAL REPEATING TRANSIT

All the ruggedness, simplicity, and trouble-free performance of the world renowned T-1...plus the convenience and extra speed of automatic vertical collimation setting.

Vertical angles can be read immediately after set-up. No need to center vertical circle level...no cleaning or maintaining moving parts.

Highway, mining, or any other surveying project, day or underground, becomes routine with the Wild T-1A.

Upper and lower motions for setting on zero and for repeating. Built-in optical plummet.

Write for Wild Booklet T-1A.

In Canada: Wild of Canada Ltd., 157 Maclaren St., Ottawa, Ontario

WILD
HEERBRUGG
INSTRUMENTS, INC.
Main at Covert St. • Port Washington, N.Y. • PORt Washington 7-4811
FULL FACTORY SERVICES

(Continued from page 98)

1 story research laboratory and livestock sanitary board diagnostic laboratory, Montana State College, $770,000. Plans deposit $100. J. G. Link & Co., Electric Bldg., Billings, archts. CD 11/12.

▲ **Tex., Houston**—HOTEL—BA 3/18—Joe Barshop-Holcombe Properties, Inc., c/o Joe Barshop, 1500 S. Zarzamora Ave., San Antonio (selected list of bidders), 9 story Ramada Towers Hotel, $5,000,000. Ramada Inns of America, Phoenix, Ariz., lessee. Wyatt C. Hedrick, 5201 Fannin St., archt.-engr. CD 12/30.

▲ **Tex., Houston**—HOTEL-OFFICE—Bids Asked—Lincoln Liberty Life Insurance Co., 1508 Milam St., furnishing, erecting about 4,000 tons steel for 800 room hotel-office $1,250,000, Sheraton Hotel Corp. of America, Hotel lessee. CD 9/2.

BUILDINGS—SLC

S. D., Mitchell—HOME—Brady Memorial Home, soon lets contract 58 bed nursing home. $609,497. Herges, Kirchgasler & Assocs., Aberdeen, archts.

HEAVY CONSTRUCTION—LB & CA

▲ **MINNESOTA**—State Hy. Dpt., Capitol Approach, St. Paul,
Barton Contg. Co., Osseo, Minn., CA **$1,867,369**, bit. surf. and concrete paving 8.3 mi. in Rochester, Olmsted Co. Bids Dec. 11. CD 12/16, under LB.

▲ **IOWA**—State Hy. Comn., Ames,
Iowa—**Fred Carlson Co.**, Highway 9 East, Decorah, Iowa, CA **$503,931**, c. conc. 7.174 mi. F-422(5), Webster Co.;
Iowa—**Hallett Constr. Co.**, Crosby, Minn., CA **$547,701**, c. conc. pavement and wid'n. and b. conc. resurf. 2.23 mi. U-206(17), Polk Co. Bids Dec. 15. CD 12/21, under LB.

▲ **TEXAS**—Texas Hy. Comn., Austin,
Tex.—**Condon-Cunningham, Inc.**, 2324 Shore Crest Dr., Dallas, Tex., CA **$1,858,168**, grading, concrete pavement 1.092 mi. Hy. I 35W, Proj. I 35W-5(11) 426, Tarrant Co.;
Tex.—**Cooper & Woodruff, Inc.**, P.O. Box 1082, Amarillo, Tex., CA **$629,464**, grading, flex. base, A.C. pavement 12.298 mi. US 287 and FM 1258, Proj. F-523(9) S-2372(1), Armstrong Co.;
Tex.—**F & C Engineering Co.**, Box 74, Houston, Tex., CA **$1,007,574**, grading, cement stab. base, HMAC pavement 0.00 mi. Hy. 1H45, Proj. I-45-1 (2 and 5) 49, Harris Co. Bids Dec. 15. Grand total $3,495,206. CD 12/21, under LB.

▲† **Cosmo Constr. Co.**, 7324 Chocolate Bayou Rd., Houston, Tex., LB **$2,840,957**, est. $2,500,000-$5,000,000, Schedule No. 1, Brays Bayou Channel rectification, widening, deepening, from Bethlehem Steel area to I-G-N Ry., ENG-41-243-60-25B, TEXAS. U. S. Eng., Box 1229, Galveston, Tex. Bids Dec. 23. CD 12/22, under LB.

▲ **Maxwell Constr. Co.**, Box 119, Baytown, Tex., LB **$1,018,089** (9 bidders), unit of bulk materials handling plant and channel dredging Greens Bayou from Ship Channel to dock, HOUSTON, TEX. Harris County Houston Ship Channel Navigation Dist. Port Comn., 1519 Capitol Ave., Houston, Tex. Bids Dec. 30. CD 12/15.

▲† **W. L. Constr. Co.**, Box 3987, 1226 NW 4 St., Oklahoma City, Okla., LB **$1,253,421**, rehabilitation 480 Wherry Housing, 05-600-60-50, DENVER, COLO. Base Procurement Office, Bldg. 358, Lowry Air Force Base, Denver, Colo. Frank R. Rae, 924 Broadway, Denver, Colo., engr.

BUILDINGS—LB & CA

▲ **Naugle-Leck, Inc.**, Baker Bldg., Minneapolis, Minn., CA **$16,000,000**, 12 story OFFICE, incl. 1,000-car parking ramp, 15-17 floor motel and apartment, plaza and restaurant, block between 6th and 7 Sts. and Marquette and 2nd Aves., MINNEAPOLIS, MINN. Baker Properties, Inc. & Assocs., Baker Bldg., Minneapolis, Minn. E. F. Baker, 408 Mobil Oil Bldg., Minneapolis, Minn., archt.

▲ **John Porta & Carmen Di France**, c/o 8112 St. Charles Rock Rd., Overland 14, Mo. ,Owner Builds, Over **$2,000,000**, 300 RESIDENCES, incl. sanitary and storm sewers, concrete streets, and sidewalks, Whitecliffe Park Subdivision, HAZELWOOD, MO.

▲ **Inwood Constr. Co.**, Trinity Universal Bldg., Dallas, Tex., CA **$1,250,000**, SHOPPING CENTER, AMARILLO, TEX. M. T. Johnson, Jr. & M. T. Johnson, Sr., Fisk M & P Bldg., Amarillo, Tex. CD 4/26/56.

▲ **F & C Engineering Co.**, Box 74, Houston, Tex., CA **$7,000,000**, 970,000 sq. ft. SHOPPING CENTER, HOUSTON, TEX. Frank W. Sharp, c/o Sharpstown Center, Oak Forest State Bank Bldg., Houston, Tex. CD 12/30.

▲ **LeBlanc Constr. Co.**, 2518 Huldy St., Houston, Tex., CA **$2,345,535**, 4 ELEMENTARY SCHOOLS, one at Stancliff, Simms Dr., Simbrook and White Heather, one at Ringold and Lawn Sts. and Basso, one at Telephone Rd. and Westover, other at Bellfort and Comal Station, HOUSTON, TEX. Houston Ind. School Dist., 1300 Capital Ave., Houston, Tex. Bids Dec. 17. CD 12/28, under LB.

▲ **Schneider Constr. Co.**, 3511 Linkwood St., Houston, Tex., CA Approx. **$1,000,000**, CREAMERY PLANT addn., COLD STORAGE, HOUSTON, TEX. Carnation Co., 701 Waugh Dr., Houston, Tex.

▲ **Grean Western Aggregates, Inc.**, Rocky Flats Area, Boston Bldg., Denver, Colo., cancelled bids to have been opened Jan. 20, lightweight aggregate PLANT, DENVER, COLO. CD 12/15.

(Continued on page 104)

...ON A MILE-LONG BRIDGE BUILT BY YUBA

With plans well underway on major bridges at Buffalo, N.Y. and Knoxville, Tenn., Yuba Erectors recently started construction on another: the erection of sub- and super-structures of the high-level Martinez-Benicia Bridge across upper San Francisco Bay.

Four lanes wide, 6215 feet long, and with a maximum height of 138 feet, this $14.3 million structure is scheduled for completion in 1962.

To complete the bridge on schedule and in record time, a habit with this fast-moving nationwide organization, Yuba Erectors will make full use of experience and skills gained in building such other notable structures as the Richmond-San Rafael and Glen Canyon bridges.

On these and other major projects, Yuba has developed advanced technologies and introduced specialized land and water equipment and procedures that solve scores of problems and expedite construction.

Bridge erection is but one phase of Yuba Erectors' operations. As a member of Yuba's diversified family, this division is backed by Yuba's fabricating plants—East and West—and can thus provide a wide range of services for all Yuba divisions in the heavy structural and mechanical fields. Call on Yuba, when you have a project in either field—wherever it may be located.

YUBA

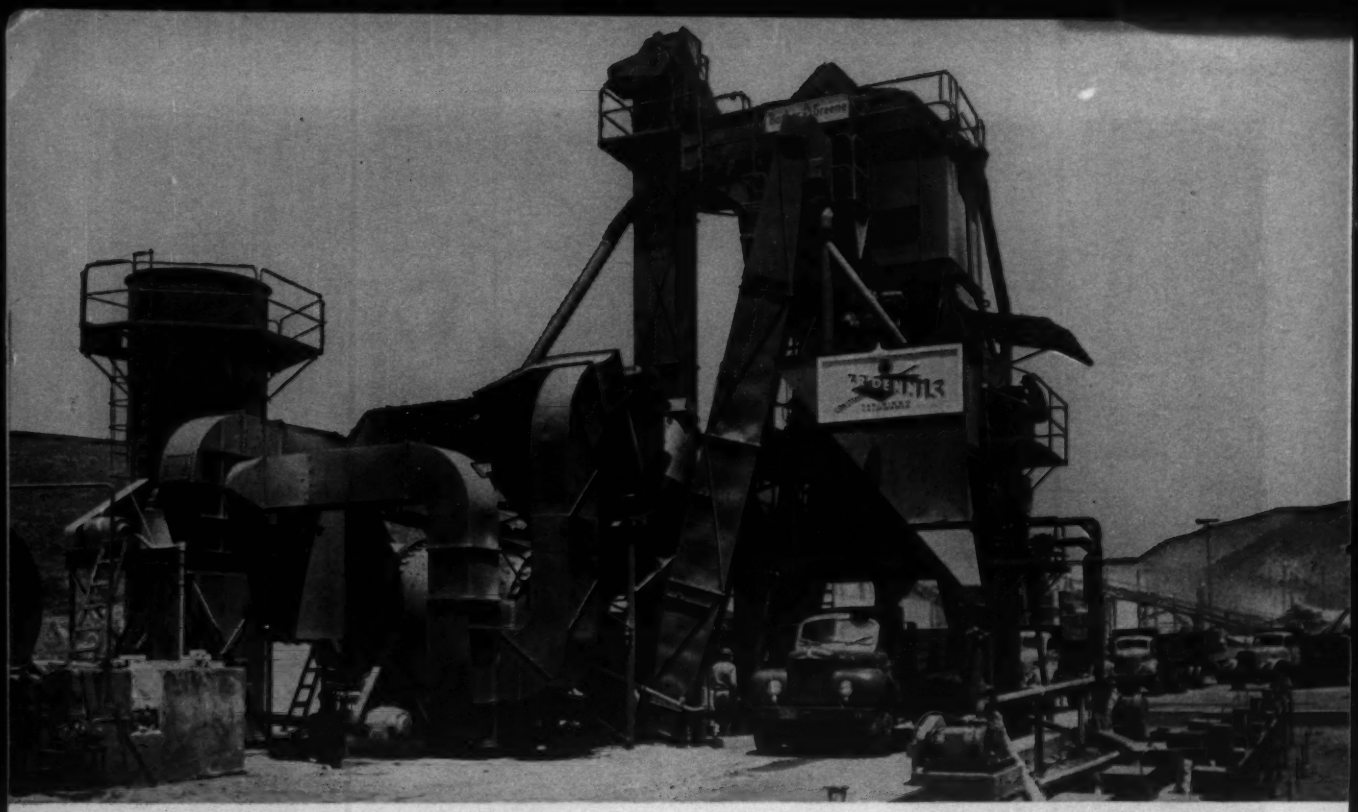
specialists in structural and heavy mechanical erection—nationwide

YUBA ERECTORS

4300 Eastshore Highway, Emeryville 8, California • A Division of

YUBA CONSOLIDATED INDUSTRIES, INC.

Sales Offices in Atlanta • Buffalo • Chicago • Cleveland • Houston • Los Angeles • New York • Philadelphia • Pittsburgh • San Francisco • Seattle



BARBER-GREENE BATCHOMATIC PLANT

HOW TO GET TOP FROM YOUR NEW

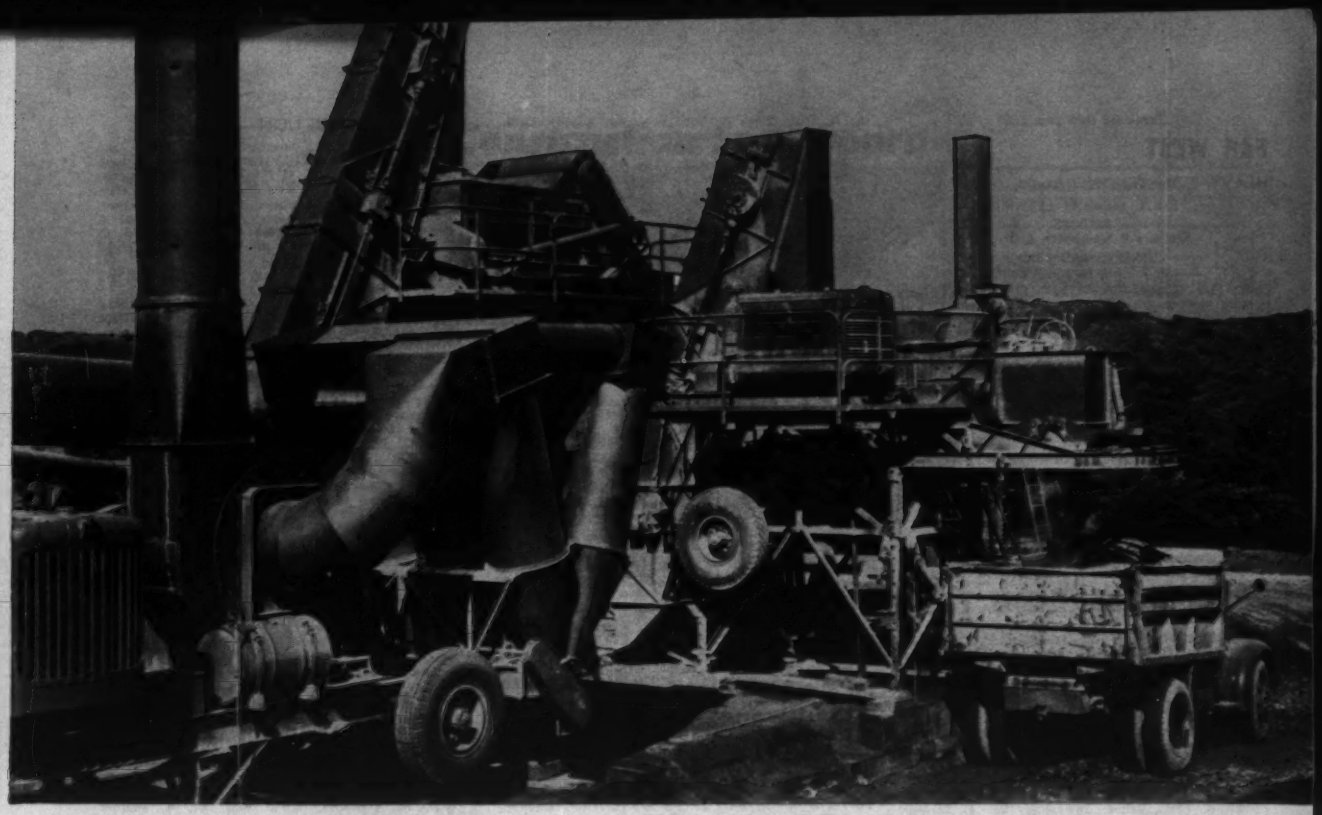
Invest after getting full facts on which of 17 Barber-Greene continuous mix and batch plants is custom fitted to your needs

Before you buy a new asphalt plant, spend a few moments learning whether a continuous mix or batch-type plant can produce the top tonnage and profits for your operating conditions.

And you can be sure of getting full facts on both type plants from the man who sells 17 sizes of continuous mix and batch plants—your Barber-Greene distributor. He does no short line selling, but rather can analyze your operation and pencil out the profit picture on the type plant he recommends.

Should his analysis show a Barber-Greene Continuous Mix plant is your best investment, you get these 10 benefits: 1) up to 10% savings on initial plant costs; 2) sustained high production at lowest per ton cost; 3) up to 10% lower operating costs in horsepower and fuel savings; 4) up to 10% lower maintenance costs per ton; 5) higher resale value; 6) less skilled operators required; 7) continuous preset proportioning accuracy; 8) fastest of any plant average setup time; 9) buy and use only components needed for a specific job; and 10) move and use only components needed for your next job.

Should your operations be best served by your size Barber-Greene BatchOmatic, you get all these exclusive features: 1) only completely new and proved automatic plants—no warmed-over designs; 2) push-button mix changes with no penalty for automatic operation; 3) most rugged and reliable automatic control system cuts downtime in half; 4) greatest production per dollar of plant investment; 5) all movement in new deeper, shorter pug mill is mixing action giving most thorough mixing in less time; 6) fastest discharge from largest pug mill opening plus fast hydraulically activated gate; 7) up to 10% more tonnage hourly with advanced cycling principle; 8) over 25% greater sand screening capacity; 9) completely pre-wired plant is standard equipment; 10) completely hydraulic operation is standard



BARBER-GREENE CONTINUOUS PLANT

TONNAGE, PROFITS ASPHALT PLANT

equipment—no need of auxiliary air compressor; and 11) plant comes completely assembled in sections for fastest erection, disassembly.

If you need a power control or manually operated batch plant, you can choose from eight equally productive models in the reference chart.

Spend a little time with your Barber-Greene distributor before you buy any asphalt plant. You'll find it's the wisest investment you ever made.

One of these Barber-Greene plants gives you top tonnage, profits

CONTINUOUS MIX		BATCH-TYPE		
Model	TPH Range	BatchOmatic Model	Power Control	Manual Model
840-B	55	892	2000 lbs.	890...1000 lbs.
845	90	893	3000 lbs.	891...1500 lbs.
847	160	894	4000 lbs.	892...2000 lbs.
848-A	250	895	5000 lbs.	
		896	6000 lbs.	

Only Barber-Greene offers four different finishers plus a new versatile road widener —equipment sized for all your needs.

World's No. 1 Manufacturer of Asphalt Paving Equipment

Representatives in Principal Cities of the World

Barber-Greene BG

Main Office and Plant AURORA, ILLINOIS, U. S. A.
Plants in DeKalb, Illinois..Detroit Canada England. Brazil..Australia

(Continued from page 100)

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

February 9 Washington & Oregon

STREETS AND ROADS

January 27, February 3, 4 California

Calif., Los Angeles—BA 1/22—Los Angeles County Flood Control Dist., 2250 Alcazar St., Proj. 536, East Lawndale Storm Drains; Proj. 535, Unit 1, Line A, Lawndale Storm Drain, Hawthorne. $686,400. CD 11/10/58.

▲† Calif., Point Mugu—MISSILE PROJECT BLDG., etc.—BA 2/9—Dist. P. Wks. Office, Eleventh Naval Dist., 1220 Pacific Hy., San Diego, missile project bldg., test project bldg. and addns. to instrumentation bldg., Spec. 24662-59. $2,500,000 CD 9/25.

▲ California—BA 2/10—State Dpt. Water Resources, 1120 N St., Sacramento, Whale Rock Conduit involving about 92,000 ft. 12- to 30-in. pipe modified prestressed concrete or welded steel, between Whale Rock Dam at Cayucos and San Luis Obispo Co., Spec. 59-15. $2,000,000-$3,000,000. CD 3/27/57.

▲† California—BA 2/16—U.S. Eng., 751 S. Figueroa St., Los Angeles, channel imprvt. Sawtelle-Westwood Sys., Westwood Branch, Moraga Dr. to Wilshire Blvd., Ballona Creek Basin, Los Angeles, CIVENG-04-353-60-14. $2,000,000. CD 4/24/44.

BUILDINGS—BA

Calif., Hemet—SCHOOL—BA 1/25—Hemet Valley Unified School Dist., 831 E. Devonshire, Hemet Junior High School. $600,000. CD 12/10.

Calif., Norwalk—SCHOOL—BA 1/26—Norwalk-La Mirada School Dist., 12820 S. Pioneer Blvd., Intermediate School No. 4, La Mirada. $900,000. CD 4/30.

▲ Calif., Riverside—HOSPITAL—BA 1/26—County of Riverside, 4050 Main St., Riverside County Hospital, Phase III. $1,500,000. CD 12/22

▲† Honolulu, Hawaii—HOUSING—BA 2/25—U. S. Eng., P.O. Box 224, Zone 4, 481 units (No. 20) Capehart Housing, Fort Shafter; 385 units (No. 2) Capehart Housing, Schoefield Barracks. CD 7/10, under CA.

HEAVY CONSTRUCTION—LB & CA

† Morrison-Knudsen Co., Inc., 319 Broadway, Boise, Idaho. CA $968,000, two buildings at Northeast Cape Air Force Station, St. Lawrence Island, Inv. 60-14, NORTHEAST CAPE, ALASKA. U. S. Eng., 1519 South Alaskan Way, Seattle 4, Wash. Bids Dec. 23. CD 12/30, under LB.

▲† ARIZONA—Bureau P. Rds., 133 Hermann St., San Francisco, Calif.,

Jones & Trotz, Box 8038, Albuquerque, N. M., CA $2,485,579, grading, base course, bit. plant mix surf 12.054 mi. Arizona Kitt Peak Observatory Rd., IFB R-310 Papago Indian Reservation, Pima Co. Bids Nov. 24. CD 12/22, under LB.

† H. Halvorson, Inc., Yardley, Wash., CA $837,980, est. $740 603, (6 bidders), microwave facilities for Atlas ICBM installations, Fairchild Air Force Base, Inv 60-60, SPOKANE, WASH. U. S. Eng., 1519 S Alaskan Way, Seattle 4, Wash. Bids Dec. 17. CD 12/24, under LB.

▲ The Perini Corp., 73 Montwait Ave., Boston, Mass., LB $10,016,440, est. $10,336,000, (10 bidders), complete Mayfield Hydroelectric Dam, Cowlitz River, TACOMA, WASH. City, City Hall, Tacoma, Wash., Bids Jan. 5. CD 11/9;

Allis-Chalmers Mfg. Co., 1126 S. 70 St., Milwaukee, Wis., LB $3,330,100, (4 bidders), 40,000 kw. generators, (Tacoma, Wash.);
General Electric Co., 1 River Rd., Schenectady, N. Y., LB $639,161, (8 bidders), 4 transformers, (Tacoma, Wash.).

▲ CALIFORNIA—State Div. Hys., 120 S. Spring St., Los Angeles,

Fredericksen & Kasler, 212 13th St., Sacramento, Calif., CA $5,755,891, grade, pave to constr. 7.7 mi. 4-lane freeway US Hy. 91 State Sign Rte. 18 between 7 mi. west of Corona and 0.6 mi. east of Pierce St. in Riverside, incl. 12 structures, V111-Riv-Re-A OR. B, Riverside Co. Bids Dec. 17. CD 12/23. under LB.

▲ Pacific Pipeline Constr. Co., 1623 S. Greenwood, Montebello, Calif., CA Est. $17,300,000, (10 bidders), 116 mi. natural gas pipe line from near Barstow to near Needles, CALIFORNIA. Pacific Lighting Gas Supply Co. affiliate of Southern California Gas Co. and Southern Counties Gas Co., 810 S. Flower St., Los Angeles 17, Calif. CD 11/26/58.

† Robert L. Wilson Co., 850 29th St., Oakland, Calif., CA $664,521, concrete block masonry and rein.-con. officers open mess, IFB 60-27, BEALE AIR FORCE BASE, CALIF. U. S. Eng., 1209 Eighth St., Sacramento, Calif. Bids Dec. 22. CD 12/30, under LB.

† Baldwin Contg. Co., Ninth and Yuba Sts., Marysville, Calif., LB $605,607, (third increment) roads, walks and parking, Naval Air Station, NBy 25183, LEMOORE, CALIF. Dist. P. Wks. Office, 12th Naval Dist., Rm. C112, San Bruno, Calif. Bids Dec. 16. CD 11/24.

▲† Bechtel Corp., Box 58424, Vernon (Br. of Los Angeles), Calif., CA $2,962,262, Atlas Missile Silo Launch Test Facility, Vandenburg Air Force Base, LOMPOC, CALIF. U.S. Eng., 751 S. Figueroa St., Los Angeles, Calif. CD 11/3.

E. A. Irish, 2944 Gleneden Ave., Los Angeles, Calif., CA $730,884, Granada Trunk Line extension, unit IV B, LOS ANGELES, CALIF. Los Angeles Dpt. Water & Power, 316 W. 2nd St., Los Angeles, Calif. Bids Nov. 24, awarded Jan. 5. CD 12/4, under LB.

† Central Constr. Co., Medical Arts Bldg., Seattle 4, Wash., CA $663,947, fire and crash station addn., quarters and related work, Inv. 5-60-36, COLD BAY, ALASKA. Federal Aeronautics Admin., Box 440, Anchorage, Alaska. Bids Dec. 21. CD 12/30, under LB.

BUILDINGS—LB & CA

▲ Dearden Constr., 2520 S. State, Salt Lake City, Utah, CA Est. $1,250,000, general contract BOWLING ALLEY, SALT LAKE CITY, UTAH. Rancho Lanes, Inc., 640 W. N. Temple, Salt Lake City, Utah. CD 12/11.

† B & E Constructors, Inc., P. O. Box 825, Albuquerque, N. M., LB $676,910, est. $665,702, (7 bidders) 192-capacity DORMITORY, CLASSROOMS, DUPLEXES appurtenances, Rock Point, ARIZONA. Bureau Indian Affairs, P. O. Box 17, Branch of Plant Design & Constr., Albuquerque, N. M.

Hyatt House, Inc., 4304 S. 178 St., Seattle, Wash., Day Labor, $800,000, 2 story, 64 x 266 ft., 64 x 154 ft. and 158 x 210 ft. MOTEL, 17025 Pacific Hy. S, SEATTLE, WASH. R. Dorman & Assocs., 261 N. Robertson, Beverly Hills, Calif., archts. CD 1/7.

Gragmont Land Co., 343 Hawthorne Way, Hawthorne, Calif., Owner Builds, $758,200, 72 frame, stucco DWELLINGS, New Hampshire Ave., Javelin St., W. 208th St. and Clarion Dr., LOMITA, CALIF.

▲ B. L. Metcalf, Inc., 1460 N. Glassell St., P. O. Box 110, Orange, Calif., CA $1,239,988, INSTRUCTIONAL AIDS and SERVICE CENTER FACILITIES at Board Offices, 1061 Temple St., LOS ANGELES, CALIF. Bd. Educ., 1425 S. San Pedro St., Los Angeles, Calif. Bids Nov. 20. CD 11/25, under LB.

Wm. R. Smith Constr. Corp., 5818 Venice Blvd., Los Angeles, Calif., LB $594,573, (8 bidders), Paseo Del Rey SCHOOL, LOS ANGELES, CALIF. Bd. Educ., 1425 S. San Pedro St., Los Angeles, Calif. Morris D. Verger, 8222 W. 3rd St., Los Angeles, Calif., archt. CD 6/9/58.

S. F. & K. S., Inc., 2135-B W. Ball Rd., Anaheim, Calif., Owner Builds, $655,200, 26 stucco DWELLINGS, E. Adams St. Tract 2881, ORANGE, CALIF.

▲ Twaits-Wittenberg Co., 507 S. Bixel St., Los Angeles, Calif., CA Est. $4,000,000, HOME FOR RETIRED, POMONA, CALIF. Congregational Conference, 3125 W. Adams Blvd., Los Angeles, Calif. Bids Dec. 18. CD 12/7.

L. P. Scherer, 208½ Orange St., Riverside, Calif., LB $588,800, (6 bidders), 65 unit HOUSING Redlands, SAN BERNARDINO, CALIF. San Bernardino Housing Auth., 440 Crestview, San Bernardino, Calif. Bids Dec. 29. CD 12/11

▲ Heers Bros., Inc., Box 306, Lemon Grove, Calif., Owner Builds, $1,142,548, 83 frame, stucco DWELLINGS, SANTEE, CALIF.

Pacific Coast Builders, 1 South Park, San Francisco, Calif., CA $726,000, 50,000 sq. ft. prestressed concrete Mango Ave. SCHOOL, SUNNYVALE, CALIF. Sunnyvale Elementary School Dist., 275 W. McKinley Ave., Sunnyvale, Calif. Bids Dec. 16. CD 12/28, under LB.

Tani Constr. Co., 1083 S. Beretania, Honolulu, Hawaii, LB $707,000, (6 bidders), concrete, prestressed beams, etc. CLASSROOM for University of Hawaii, HONOLULU, HAWAII. State, P. Wks. Dpt., Punchbowl and Queen, Honolulu, Hawaii. Takashi Anbe & George Lee, 1631 Kapiolani, Honolulu, Hawaii, archts. CD 8/6.

CANADA

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

January 14 British Columbia

▲ Ont., Toronto—SUBWAY—BA 2/1—Toronto Transit Comn., 1900 Yonge St., 2,900 lin. ft. subway structure various sections, incl. two finished stations sections, miscellaneous work Bloor-Danforth-University Subway, Stage 1, Contract U-1. Plans deposit $100. Extended date. Norman D. Wilson, Consulting Engineer, 128 Glen Rd., and DeLeuw, Cather & Co. of Canada Ltd., 52 St. Clair Ave. E., engrs. W. S. Atkins & Assocs. Ltd., 33 Price St., engrs. for tunnel work. John B. Parkin Assocs., 1500 Don Mills Rd., consult., archts. CD 12/1.

BUILDINGS—BA

▲ B. C., Vancouver—MEDICAL SCIENCES—BA 1/28—Dpt. P. Wks., Parliament Bldgs., Victoria, 3 story 50x200 ft., 3 story, 50x225 ft., and 4 story 50x130 ft., bsmnts., rein.-con., etc., medical sciences bldgs. $2,600,000. Plans deposit $150, general contrs. only. Thompson, Berwick & Pratt, 1553 Robson St, archts. O. Safir & Co., 525 Seymour St., engrs. CD 4/13/45.

▲ B. C., Vancouver—CIVIC THEATRE—BA 2/1—City, City Hall, steel, concrete civic theatre, Dunsmuir and Cambie St. $1,000,000. Plans deposit $100. H. N. Semmens & Assocs., 1272 W. Pender, archts. CD 10/21/43.

HEAVY CONSTRUCTION—LB & CA

▲ Tide Co. (B.C.) Ltd., Annacis Industrial Estate, and Howden Constr. Co. Ltd., 1877 Marine Dr., North Vancouver, B. C., LB $1,216,340, est. $1,000,000, rein.-con., concrete block sewage treatment plant sedimentation and pre-aeration tanks, West Vancouver, VANCOUVER, B. C. Greater Vancouver Sewerage & Drainage Dist., 2294 W. 10th Ave., Vancouver, B. C. K. E. Patrick, 2295 W. 10th St., Vancouver, B. C., engr. Bids Dec. 9. CD 12/1.

▲ MANITOBA—Manitoba Govt., Parliament Bldgs., Winnipeg, Bids opened Dec. 18,

Man.—Simkins Constr. Co. Ltd., Andrews and Jarvis Sts., Winnipeg, Man., LB $1,103,720 (4 bidders), drainage and embankment 22.36 mi. Thompson-Wabowden-Wekusko Rd. from Wabowden Setting Lake Rd. to Soab Creek. CD 12/9.

Man.—Winnipeg Supply & Fuel Co. Ltd., Boyd Bldg., Winnipeg, Man., LB $104,800 (7 bidders), stockpile traffic gravel 22.7 mi. for Thompson-Wabowden-Wekusko Rd. between Thompson and Joey Lake, Section IG.

Claydon Co. Ltd., 290 Garry Ave., Winnipeg, Man. LB $532,000 (3 bidders), rein.-con. pumping station, Wilkes Ave., WINNIPEG, MAN. City, City Hall, Winnipeg, Man. CD 2/2 45.

▲ Connex Corp., 6555 Côte des Neiges Rd., Montreal, Que., CA $1,050,000, water mains, filtration plant, pump house, etc., ST. GABRIEL DE BRANDON, QUE. Municipalite de St. Gabriel de Brandon, City Hall, St. Gabriel de Brandon, Que. CD 12/9, under LB.

BUILDINGS—LB & CA

Piggott Constr. Ltd., 12522 126th St., Edmonton, Alta. CA $770,336, 3 story, 70-bed, steel, concrete HOSPITAL, PEACE RIVER, ALTA. Peace River Municipal Hospital Dist., Peace River, Alta. Bids Nov. 25. CD 11/12.

Commonwealth Constr. Co. Ltd., 700 Taylor St., Vancouver, B. C., LB $619,485 (7 bidders), extensive HOSPITAL alterations, VANCOUVER, B. C. Vancouver General Hospital, 12th and Heather, Vancouver, B. C. Bids Dec. 15. CD 12/1.

▲ Smith Bros. & Wilson Ltd., 1267 Richards St., Vancouver, B. C., CA $1,600,000, 9 story, 68x110 ft., steel, concrete office, corner Thurlow and Pender Sts., VANCOUVER, B. C. Fidelity Life Assurance Co., 736 Granville, Vancouver, B. C. Bids Dec. 4, awarded Dec. 28. CD 12/1.

▲ Bird Constr. Co. Ltd., Sargent and Erin Sts., Winnipeg, Man., LB $1,211,921 (7 bidders), SCIENCE SERVICE LABORATORY addn., WINNIPEG, MAN. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont.

▲ Associated Electric Industries of Canada Ltd., 212 King St. W., Toronto, Ont., CA Est. $8,800,000, two 300,000 kilowatt STEAM TURBO GENERATORS, for Lakeview Generating Station, for Units 3 and 4 to go into operation 1963-1964, TORONTO, ONT. The Hydro-Electric Power Comn. of Ontario, 62 University Ave., Toronto, Ont.

▲ Montclair Constr. Co., 5515 Upper Lachine Rd., Montreal, Que., CA $1,577,565, Sir Winston Churchill HIGH SCHOOL, MONTREAL, QUE. Protestant School Bd. St. Laurent, Montreal, Que. Bids Dec. 9. CD 12/16, under LB.

PUERTO RICO

HEAVY CONSTRUCTION—BA

▲† Puerto Rico, Fort Allen (formerly Camp Losey)—HOUSING—BA 2/2—U. S. Eng., P.O. Box 4970, Jacksonville 1, Fla., U.S.A., 150 single family unit Capehart Homes. $2,291,000. CD 12/23.

HEAVY CONSTRUCTION—LB & CA

▲ Forcum-Lannon, Inc., Clark St., Dyersburg, Tenn., U.S.A., LB $1,305,899, 3,700 ft. 66 in. concrete sewerage pipe line, Bayamon, PUERTO RICO. Puerto Rico Aqueduct & Sewer Auth., Stop 26, San Juan, Puerto Rico. Buck, Seifert & Jost, 112 E. 19th St., New York, N. Y., U.S.A., engrs.

▲ Raymond Constr. Co. of Puerto Rico, Calle Labra 800, San Juan, Puerto Rico, CA $1,287,310, 2-berth concrete cargo wharf, 1,200 ft. long, 38 ft. wide, steel pipe pilings, San Juan PUERTO RICO. Puerto Rico Ports Auth., Isla Grande, San Juan, Puerto Rico. Tippetts-Abbott-McCarthy-Stratton, Carretera 2, Km. 3.4, Pueblo Viejo, San Juan, Puerto Rico, archts. Bids Dec. 18. CD 6/25/54.

FOREIGN

HEAVY CONSTRUCTION—BA

▲ Australia—BA 6/30—State Dpt. P. Wks., Perth, Australia, Ord River Dam at Bandicoot Bar, 50 mi. from Wyndham, $5,600,000; distribution sys., $1,-120,000.

AMERICANS ABROAD

HEAVY CONSTRUCTION—LB & CA

† Five Boro Constr. Corp., 2 Lafayette St., New York, N. Y., CA $672,979, water sys. imprvs., Naval Base, NBy 17939, Spec. 17939/59, GUANTANAMO, CUBA. Area P. Wks. Office, Caribbean Naval Station, San Juan, Puerto Rico. Bids Oct. 29. CD 11/17, under LB.

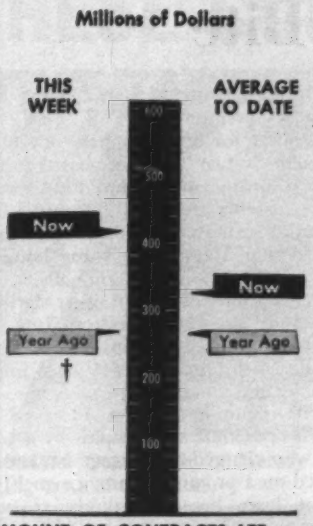
BUILDINGS—LB & CA

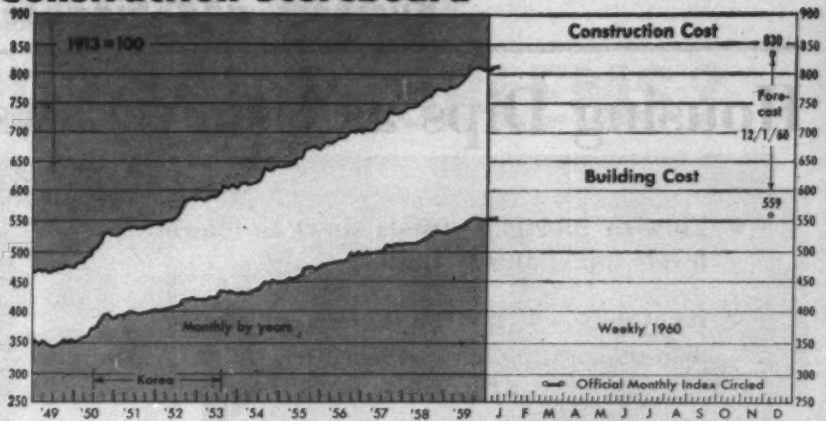
▲ George Wimpey & Co., Ltd., Pontings Bldg., Kensington-High St. 17, London WA 8, England, CA Est. $9,000,000, POLYTHENE PLANT, MELBOURNE, AUSTRALIA. Union Carbide Australia Ltd. (sub. Union Carbide Corp.), Box 5322, Sidney, Australia.

(Proposal Advertisements see pp. 113 to 115)

Construction Scoreboard

Contracts...





CURRENT ENR COST INDEXES

ENR INDEXES (1913=100), 20-cities' average	Week of Jan. 7 1960	% Change from Dec. 10 1959	% Change from Jan. 8 1959
Construction Cost	812.49	+0.47	+4.39
Building Cost	554.99	+0.39	+3.49

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850.
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518.

AMOUNT OF CONTRACTS LET

	†This Week millions	Cum. 2 wks# 1960 millions	Chge '59-'60 %
All Heavy Constr.	$415.6	$647.0	+21
By Ownership			
PRIVATE	225.9	327.2	+122
PUBLIC	189.7	319.8	−17
State & Municipal	147.1	235.9	−19
Federal	42.6	83.9	−13
By Type of Work			
PUBLIC			
Waterworks	5.1	12.6	−14
Sewerage	16.1	28.7	−17
Bridges*	8.1	16.5	−56
Highways	73.2	103.0	− 5
Earthworks, Dams & Waterways	4.6	24.4	−11
Buildings:			
Excl. Housing	28.2	46.3	−50
Housing	22.4	31.4	+160
Unclassified	32.0	57.1	− 6
PRIVATE			
Buildings:			
Mass Housing	81.2	115.9	+81
Commercial	53.0	68.2	+36
Industrial	71.7	118.1	+356
Unclassified	20.0	24.8	+254

*Includes private bridges. † 4 day week.
#Revised to include Alaska and Hawaii

NOTE: Minimum size projects included are: Waterworks and waterways, $53,000; other public works, $88,000; industrial buildings, $110,000; other buildings, $400,000.

CAPITAL . . .

New Capital For Construction	Week of Jan. 7 millions	Cum. 1 wk 1960 millions	Chge '59-'60 %
Corporate Securities	$....	$....	..
State and Municipal:			
All Except Housing	119.0	119.0	+661
Housing	....	....	..
Federal Loans	0.7	0.7	−74
Federal Aid	....	....	..
Total Nonfederal	$119.7	$119.7	+532
Federal Appropriations:			
Projects in U. S.	....	....	..
Outside U. S.	....	....	..
Total New Capital	$119.7	$119.7	+532

CONTRACTS AWARDED

	1959 Dec. (millions)	1959 12-Mos. (millions)	Percent Change from 1958 Dec.	Percent Change from 1958 12-Mos.
Total U. S. (ENR reported)	$1,590.0	$20,405.0	+18	+ 6
Private	869.2	10,388.0	+55	+34
Public	720.8	10,017.0	− 9	−12
State and Municipal	490.3	7,268.5	−23	−16
Federal	230.5	2,748.5	+52	− 2
ENR Volume Index, 1913 = 100	436	540	− 6	+ 2

NEW CONSTRUCTION CAPITAL

Total U. S.	$677.4	$17,236.5	− 9	− 5
State and Municipal Bond Sales	427.0	6,001.8	− 6	+ 1
Corporate Security Sales	244.3	4,164.6	−11	−17
Federal Loans, Aid (nonfederal work)	6.1	3,483.6	−47	+25
Federal Appropriations, (federal work)*	0	3,586.5	0	−10

* Includes funds for outside U. S.

MATERIALS SHIPMENTS

Unit	1959 Sept. (S) Oct. (O) Nov. (N)	1959 Cum. (No. of Mos.)	Percent Change from Year Ago Mo.	Percent Change from Year Ago Cum.
Portland Cement, Bur Mines, thous bbls	22,025(N)	314,708(11)	−10	+ 8
Concrete Paving Awards, PCA, thous sq yd	5,315(N)	87,035(11)	−38	−22
Fabricated Structural Steel, thous tons	181(N)	2,669(11)	−33	−21
Bookings, AISC, thous tons	260(N)	2,857(11)	+ 7	−11
Reinforcing Bars, Net, AISI, thous tons	#	#	#	#
Lumber, NLMA, mil fbm	2,639(N)	33,350(11)	− 1	+ 7
Orders, mil fbm	2,620(N)	32,965(11)	+ 2	+ 7
Production, mil fbm	2,892(N)	33,583(11)	+ 6	+ 9
Clay Products, Bureau of Census				
Brick, Unglazed, Common, Face, mil bri	689.6(S)	5,584.1(9)	+ 4	+17
Vitrified Clay Sewer Pipe, thous tons	194.3(S)	1,506.6(9)	+ 4	+15
Structural Tile, Unglazed, thous tons	45.6(S)	405.5(9)	− 4	+0.2
Asphalt Products, Bureau of Census				
Asphalt Roofing, thous sales sqs	7,254.6(O)	53,168.4(10)	+23	+ 2
Asphalt Siding, thous sales sqs	124.1(O)	824.1(10)	− 6	− 7
Aluminum, Wrought, Net, Bur Census				
Sheet and Plate (non-heat treatable), mil lbs	104.4(O)	1,082.4(10)	+14	+38
Wire and Cable, mil lbs	27.6(O)	277.2(10)	+18	+23
Extruded Shapes (soft alloys), mil lbs	87.5(O)	780.4(10)	+16	+36

Not available until Jan. 1960

EMPLOYMENT AND FAILURES

Contract Const Employment, BLS, thous	2,810(N)	2,764(11)**	+ 1	+ 4
Contractor Failures, Dun & Bradstreet				
Number	186(N)	1,901(11)	+ 6	− 4
Liabilities, thous	$12,136(N)	$111,429(11)	+28	+ 6

** Average per month

Housing Dips as Usury Laws Bite

- **Flow of mortgage funds slows as interest levels top statutory limits.**
- **Kentucky will try for higher ceiling; Tennessee tests statute in court.**

Usury laws in Tennessee and Kentucky are reducing the flow of home mortgage funds in those states and are now candidates for revision.

Tennessee is court-testing its usury statutes as they may apply to home mortgages insured by the Federal Housing Administration. In Kentucky, a move to boost the present statutory 6% interest ceiling is being sparked by state officials and business leaders.

These apparently are the only two states actively aiming at changes in usury regulations through either judicial interpretation or legislative process.

There's a chance, however, that similar actions may be seen in the nine other states where maximum general contract interest rates are 6%. They are Delaware, Maryland, New Jersey, New York, North Carolina, Pennsylvania, Vermont, Virginia and West Virginia. Mortgage rates in those areas are crowding the legal limit. If service fees and discounts are considered, they may technically be above the limit.

The Federal National Mortgage Association (Fannie Mae), aware of the possibility of technical violations, has already advised its regional offices to check closely government-backed mortgages offered for sale (ENR Dec. 17, 1959, p. 232).

Fannie Mae's headaches could come from FHA-insured mortgages. The allowable FHA mortgage rate is 5.75%, but the one-half of 1% insurance premium brings total cost to the borrower to 6¼%.

It is the FHA total charge that currently is being tested in Tennessee. In other states there is the possibility that discounting practices or addition of service fees may bring FHA mortgages under scrutiny, as such practices are the means of obtaining a larger yield from the mortgage loan.

A discount is an amount paid to a lender by the seller of a house in order that the buyer can obtain the required mortgage to buy the property. Discounts are expressed in terms of points. For example, a four point discount on a $10,000 mortgage means that the seller paid the lender $400 so that the buyer could obtain the $10,000. The borrower repays the full amount at the interest rate agreed to, although the lender actually provided only $9,600 from its own resources.

The Tennessee court action follows the refusal of the state's attorney general to rule on the legality of an FHA mortgage drawing 6¼%, including the insurance premium.

Request for a ruling grew out of a decision by two Tennessee-based insurance companies not to buy FHA mortgages carrying the 6¼% rate until the technical cloud is eliminated. It's estimated that Memphis is losing housing at a rate of $25 million annually.

Penalty for violation of usury statutes is severe in Tennessee—forfeiture of both interest and principal. New York State, which also has a 6% legal limit, calls for the same penalty.

The Tennessee action was filed in Chancery Court at Memphis by a couple who charged a mortgage banker reneged on a promise to provide an FHA home loan, because validity of such loans is uncertain in the state.

The suit asks a declaratory judgment

(*Continued* p. 108)

Equipment Orders Outpace Awards

Contractors mechanized relatively faster than they took on new business during 1959. Dollar value of new orders for construction and mining equipment soared 26% above 1958 during the first 11 months of last year. That compares with a 6% gain in new business for the full year as measured by ENR contract awards.

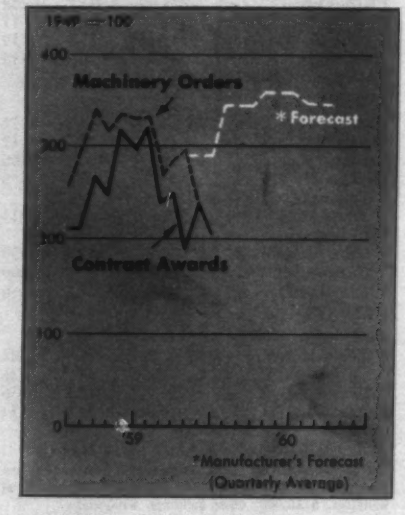
November orders for new equipment dropped off, however. The new orders index value of 227 slipped below the September-October rate and was a shade below November 1958.

The index, based on 1949 dollar volume as 100, is computed by the McGraw-Hill Economics Department based on new orders booked by a sample of equipment manufacturers.

The sharp rise in contractors' investment in new equipment last year probably reflects the brisk 34% upturn in private construction generally, and industrial building in particular, which climbed 70% over 1958.

Contractors active in private heavy construction were hit hard by the drop in new business in 1957 and felt little improvement in 1958. They cut back on equipment buying. But as new private work came back strong last year, these contractors ordered new machines in large volume for the first time in about two years.

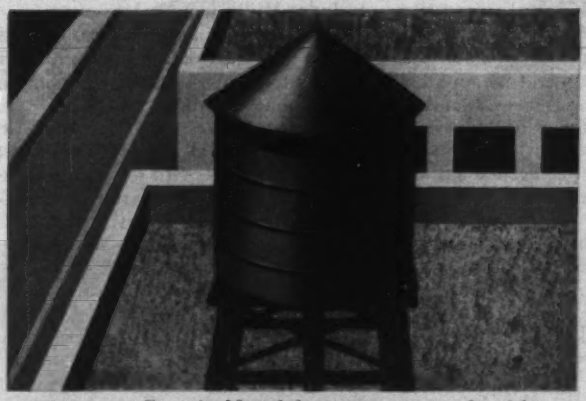
The surge of new orders from contractors primarily in private construction kept equipment sales high in 1959.



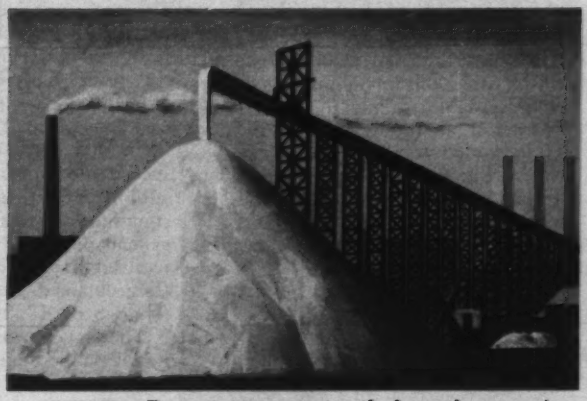
Contractors doing highway and bridge work, however, probably cut the volume of their equipment buying when contract awards dropped sharply in 1959's first half. This could also account for the sharp cut in November machinery orders.

Another factor influencing 1959's booming demand for new equipment could have been contractor fear of a steel shortage that would have crimped machinery output and stretched out deliveries late in the year. To avoid that possibility, contractors ordered replacements further in advance than usual.

HOW WOULD YOU SOLVE THESE CORROSION PROBLEMS?



1. PROBLEM: Coat inside of factory water tank without affecting taste of the water.



2. PROBLEM: Protect conveyor trestle from the corrosive effects of harmful chemical by-products.

3. PROBLEM: Guard vital parts of a dockside gantry crane from salt spray corrosion.

4. PROBLEM: Coat, while in the field, joints of welded pipe without priming or torching the surface.

JOB-MATCHED COLD COATINGS

PRE-PLANNED... PRE-MIXED... PRE-TESTED

Each Allied Chemical *Job-Matched* Cold Coating (formerly named Barrett) is made to solve specific corrosion problems. When you apply the right control you eliminate costly testing and reapplications. And *Job-Matched* Cold Coatings are inexpensive to begin with!

1. SOLUTION: *Allied Chemical T.O.F.* (#114) Coal-tar material specially compounded for the inside of potable water tanks, pipes, hydrants, hose houses and equipment where no residual taste or odor can be tolerated. Meets AWWA Specification D102-55T, Sec. 5.4.6.

2. SOLUTION: *Allied Chemical CA 50 Coating* (#150) A plasticized, gel-type, coal-tar material that meets U.S. Bureau of Reclamation Specification No. C.A. 50. Protects dams, bridge piers, exposed metal works and concrete subject to extreme corrosion.

3. SOLUTION: *Allied Chemical 34Yc Coating* (#134) A plasticized thixo-tropic, coal-tar material meeting the U.S. Navy, Bureau of Yards and Docks Specification No. 34Yc. Combats corrosion due to salt spray and other reactive conditions—piers, ships, service vessels and offshore installations.

4. SOLUTION: *Allied Chemical Service Cement* (#160) A mastic type coating with high-grade, coal-tar pitch base, plastic material. You don't have to prime for torch field welding. Use it with our Pipeline Fabric. Meets Specification SSC-153, Type II.

You name the area and there's a *Job-Matched* Cold Coating ready to be brushed or sprayed on without heating or activators. Properties include chemical resistance, heavy coating thickness per coat and fast drying.

PLASTICS AND COAL CHEMICALS DIVISION
40 Rector Street, New York 6, N. Y.

Allied Chemical

that the one-half of 1% insurance premium is not an interest charge. In support of the request, it's argued that since 1937 the Internal Revenue Service has prohibited inclusion of the premium as an interest payment deduction from income taxes.

In Kentucky, the attorney general will prepare a bill for submission to the 1960 legislature calling for a boost in the interest rate ceiling from 6% to 8%.

The action was taken after Lee P. Miller of Louisville, 1958-59 president of the American Bankers Association, said that insurance companies are pulling out of the home mortgage market in Kentucky.

The exodus of mortgage funds from the state will cause an abnormally big drop in housing starts in Kentucky during 1960, Mr. Miller warned.

Industry Building Loans Upset

Kentucky's industrial growth potential received a temporary setback when a circuit court judge ruled unconstitutional a 1958 statute establishing the Industrial Development Finance Authority. The decision will be appealed.

Under the act, the IDFA was authorized to lend small towns up to 30% of their total needs to provide plants for specific industries. The agency was also authorized to loan up to 50% of a community's total needs to develop general industrial sites. Rental income received by localities from the industries obtained would repay the loans (ENR Sept. 17, 1959, p. 308).

The law essentially allowed the lending of public money to private business whose aim is profit. The act is in violation of the state constitution, according to Judge William B. Ardery.

State officials and business leaders are not admitting defeat, however. They now may shift industrial promotion from public to private sources.

Soon after the court decision, Lt. Gov. Wilson W. Wyatt and other state officials met with top business executives to plan a drive for private funds for industrial development.

The group is considering the creation of a multimillion-dollar development corporation whose capital stock would be subscribed to by banks, insurance companies and building and loan associations in the state. The money received from the stock sale would be loaned to incoming industries or to expand existing businesses.

If the plan is supported by financial organizations in the state, the development corporation would be established within the limits of the Small Business Investment Companies Act of 1958 (ENR Oct. 30, 1958, p. 75).

Under the law, the Small Business Administration can make loans to local development companies which, in turn, can loan to all business. The loans may run up to $250,000 each and must be used for plant construction, modernization or expansion.

Business in Brief . . .

• **Concrete group relocates**—Prestressed Concrete Institute moved its headquarters from Boca Raton, Fla. to 205 West Wacker Dr., Chicago.

• **School spending**—Voter approval of a $3-million bond issue and continuance of a special tax levy for five years will provide $5.6 million for construction of schools in Eugene, Ore., through 1964.

• **Canadian expansion**—Ellicott Machine Corp., Baltimore, manufacturer of dredges and dredging machinery has formed a new Canadian company with Timberland Machines, Ltd., Ontario. The new corporation, Timberland-Ellicott, Ltd., Woodstock, Ont. will manufacture Ellicott's dredges for Canadian and foreign markets.

• **Mortgage purchase ceiling raised**—The Federal National Mortgage Association (Fannie Mae) boosted the maximum amount of a mortgage it will buy in its secondary market operations. The new limit is $20,000, up from $15,000.

• **Corps boosts spending**—The Southwestern Division of the Army Corps of Engineers bought $214 million worth of military and water resources construction work in 1959. That's 10% more than 1958 expenditures, says Brig. Gen. William Whipple, Division Engineer. During this year's first half, the division will award contracts of $100 million.

• **Gas outlays to triple**—Gas utility and pipeline companies will spend $34.4 billion for construction by the end of 1970, the American Gas Association forecasts. Estimated breakdown is $16.4 billion for transmission facilities, $10.9 billion for distribution systems, $3.4 billion for production and local storage plants, $2.3 billion for underground storage, and $1.4 billion for general construction.

• **BPR division office moves**—The New Mexico Division office of the Bureau of Public Roads is now located at 117 Federal Court House, Santa Fe. Former address was 120 East Marcy St.

• **Eastman expansion**—Eastman Kodak Co., Rochester, N. Y., will spend a record $67 million this year for improvements and additions. About $32 million will be spent in Rochester and $29 million in Kingsport, Tenn., and Longview, Tex. The remaining $6 million will go for various plants throughout the country.

• **Railroad refurbishing**—Louisville & Nashville Railroad Co. plans outlays of $4.5 million this year for modernization of its repair shops at South Louisville, Ky.

• **Expansion for tires**—Goodyear Tire & Rubber Co. will spend $4 million to expand its earthmover tire plant at Topeka. The program will be completed in 1961.

'Buy American' Question Stalls Turbine Contracts

Award of a contract for eight generators for Glen Canyon Dam has been postponed until mid-February by the U. S. Bureau of Reclamation.

Apparent low bidder, English Electric Export and Trading Co., Ltd., questioned the bureau about the accounting method used by Baldwin-Lima-Hamilton Corp. to qualify its bid for the 6% "Buy American" differential. The domestic firm says that 57% of its bid represents the part of the bid produced in the U. S. English Electric says it is less. Now U. S. government accountants are checking to see if the foreign company's claim is justified.

English Electric's bid was $6,214,522. Baldwin was next with $6,392,000. The 6% adjustment raised the foreign bid to $6,587,402, or $195,402 above Baldwin-Lima-Hamilton.

It's the first time this question has been raised and could affect bidding on future contracts. For example: Bids for three hydraulic turbines for Flaming Gorge power plant, Utah, are called for January 28.

HENDRIX

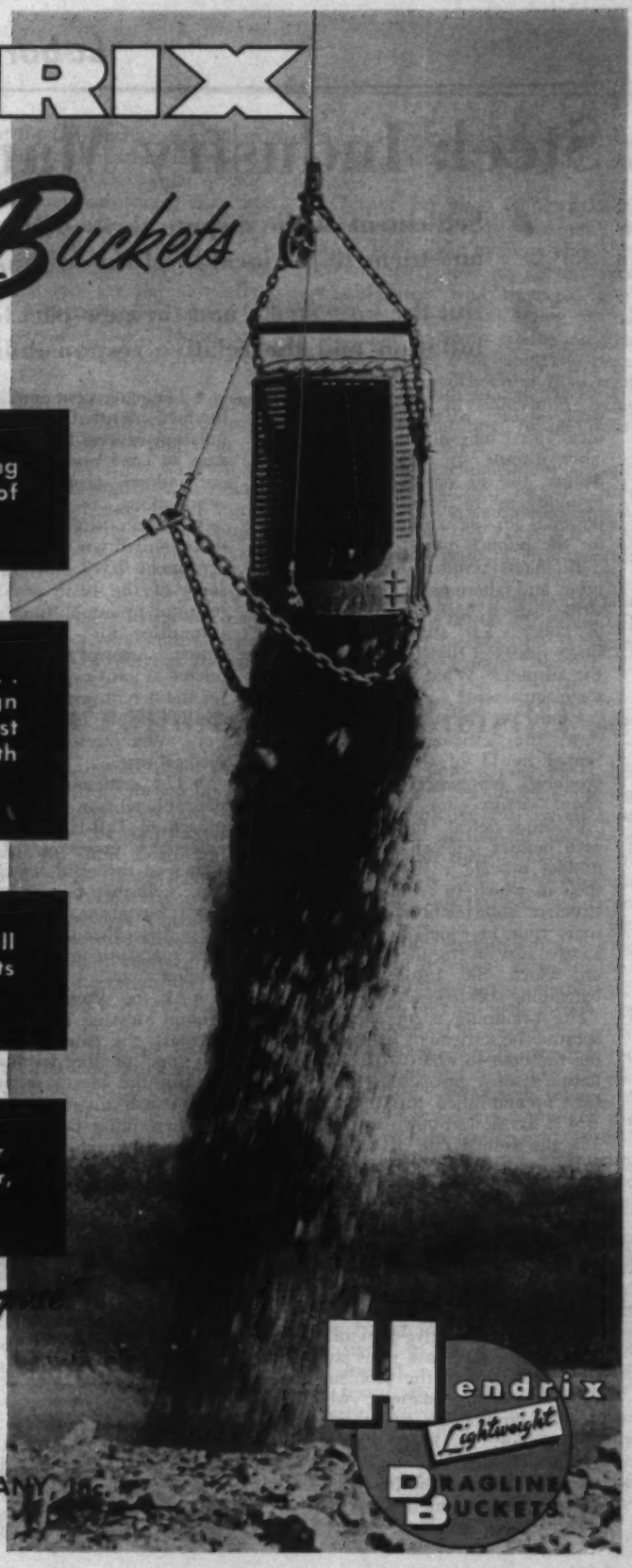
Dragline Buckets

LIGHTER BUCKET WEIGHT . . . providing greater capacity without sacrifice of strength or durability.

ALL-WELDED CONSTRUCTION . . . including arch of box-section design and one-piece hitch plate and hoist trunnion casting for structural strength and distribution of drag pull.

14% MANGANESE STEEL . . . chains, all other fittings, reversible tooth points and armor.

PERFECT PERFORMANCE . . . faster loading . . easier handling . . . cleaner, smoother dumping.



"A Type for Every Digging Purpose
¼ to 40 Cubic Yards
Perforated or Solid

HENDRIX MANUFACTURING COMPANY, Inc.
MANSFIELD, LOUISIANA

Steel: Industry Marks Time

- **Settlement of the dispute slows down the pace of annual wage boosts and turns to the local level for solution to the work rules problem.**
- **But the long strike and the new pact leave unsolved the big issue of inflation and the relative responsibility of labor and management.**

Even before the ink had dried last week on the "Memorandum of Agreement" that officially ended the longest labor dispute in the steel industry's history, the air was full of conflicting opinions as to what the settlement portends for the national economy and for the public's purse.

Eloquent result is that an acrimonious and laboriously enjoined, 116-day strike, which cost the nation billions of dollars, left still unanswered the single question that formed the core of the dispute: What is an inflationary wage agreement?

From the labor relations point of view, the settlement, reluctantly accepted by 11 of the nation's biggest producers, represents neither a "triumphant victory" for the union nor a "disastrous defeat" for the industry. It gave neither side what it sought, but it does provide a 30-month breathing spell in which to rebuild a more constructive labor relations atmosphere and some time in which to seek more objective answers to the unsolved issues on which the future of collective bargaining still hangs.

The beginning is an auspicious one because the settlement, aside from opening the door to what is likely to be the nation's most prosperous year, has at least accomplished this much:

- It has slowed down to slightly over 3% the annual rate of wage increases in an industry that economically affects all others, and has revised the cost-of-living escalation clause to make the workers bear a larger share of the risks of inflation.
- It seeks to promote "prompt settlement" of the work rules problem, "by mutual agreement at the local level," which is the effective area of determination, and sets up a joint study committee to explore the problem and to submit recommendations, which will not be binding on either side, on or before Nov. 30, 1960. This promotes the principle of voluntarism and is the approach adopted by Kaiser Steel Corp. and by the construction industry in its "Ten Commandments."
- The agreement implicitly concedes the fact, admitted earlier by Kaiser, that inflation cannot be brought to a dead stop by labor and management in any one industry or by any one round of negotiations.
- It seeks to explore, although in a more limited sense than does the Kaiser agreement (ENR Nov. 5, 1959, p. 105), some of the basic problems in labor relations by establishing a second joint committee for "human relations research." Areas of exploration, to be conducted at joint expense, include "guides for the determination of equitable wage and benefit adjustments," job classifications, wage incentives, job security and medical care.
- The settlement removes the dangers inherent in a crash program approach to Taft-Hartley changes in the emergency provisions of the law and shows, in the words of George Meany, "free collective bargaining still works."
- It has given further impetus to the proposition that labor and management have more in common than they do in conflict.
- As the President's State of the Union Message indicates, it promises to make the Administration capitalize on "one of the lessons" taught, by pushing the Meany proposal of regular labor-management discussions "outside the bargaining table."

This approach is already under way in the construction industry in the form of the Construction Industry Joint Conference.

The settlement puts any further industry price increases in line for critical public scrutiny and, by the same token, encourages further public pressure on the union and its members to cooperate in reasonable efforts to improve productivity.

In contrast to these positive achievements, U.S. Steel Chairman Roger Blough calls the settlement inflationary and the National Association of Manufacturers thinks it adds further fuel to the fires of inflation. Mr. Blough's principal consolation is that the new pact is not as inflationary as it might have been and is less costly than previous contracts (see p. 24).

A look at the 1956 and 1960 settlements explains what he means.

Direct wage increases during the 30 months of the new contract, to which some 80 smaller companies had not agreed as of last week, will amount to something better than 21 cents an hour, payable in three installments, plus possible cost-of-living increases—not to exceed 6 cents in all—Dec. 1, 1960 and Oct. 1, 1961.

Under the timetable established, the full cost to the industry, now estimated to range from 39 to 41 cents an hour, will not be assumed for another 21 months.

Immediate increase in pay envelopes is a 6- to 9-cent saving to employees resulting from industry assumption of the full cost of the insurance program formerly handled on a 50-50 basis. First minimum basic wage increase of 7 cents (with 0.2-cent increments for each of 31 job classifications) does not become effective until next December. 1. Final minimum basic wage increase of 7 cents (with additional 0.1-cent adjustments for the various classifications) is payable Oct. 1, 1961.

The cost-of-living escalation clause is carried over to the new contracts but is limited in two ways. Total of the payments on the two due dates cannot exceed 6 cents, and any unaccrued portion of this can revert to the company if actual insurance costs exceed the estimates.

The new contract provides, in addition, for improvements in the insurance, pension and supplemental unemployment insurance programs.

The more costly 1956 contract, which is somewhat difficult to compare because of its longer duration (36 months), called for an estimated 28.7-cent increase in three installments of 10.5, 9.1 and 9.1 cents each, plus semi-annual cost-of-living adjustments that netted the workers a total of 17 cents.

Original estimates of over-all direct costs—from 46 to 58 cents an hour—proved inflated, as may present esti-

mates of the new contract's cost. Total increases under the 1956 contract amounted to 42.9 cents, including the cost-of-living adjustments.

By way of comparison, the steel industry says its hourly employment costs have been going up at the rate of 8% a year. It estimates that the new settlement will slow this down to 3½ to 3¾% a year. Steel negotiator R. Conrad Cooper, who finds comparisons difficult, estimates that the rate would have been 4½ or 5% if the Kaiser formula had been used. (TVA wage rates, incidentally, have just been increased by 4.4%. Construction increases last year averaged slightly over 4%.)

Are such increases inflationary?

Mr. Cooper says "yes" because the "outer" limit of what may "conceivably be a non-inflationary" increase, at least for the steel industry, is 2.7%. He bases his conclusion on the fact, he says, that output per manhour in steel increased at the rate of only 2.6% during 1947-57.

This, in a sense, is an application of the Eisenhower proposition that wage increases should be limited to productivity increases and that inflation, in terms of dollar erosion, results when the former exceeds the latter. This means that the annual rate of increase in productivity, in terms of output per manhour, should set the pace for wage increases.

Statistics presented by Labor Secretary James Mitchell, however, indicate that the new steel pact, judged in this light, is less inflationary than Mr. Cooper suggests. The Mitchell figures for average annual 1947-57 productivity increases of wage employees in the steel industry is 3%—the lower 2.6% figure resulting only when administrative, clerical and professional workers are added. Corresponding average annual productivity increase for the economy as a whole, he says, was 3.7%.

The steel industry further takes the position than an absence of price increases cannot take the curse off inflationary wage increases because wage increases in any industry ripple out over the entire economy and eventually push all prices up.

Evaluation of the validity of these arguments is one of the tasks that lie ahead before the full impact of the steel settlement and the future of collective bargaining can be determined.

Labor, of course, will not stand still, at least relatively speaking, and uses the correlative argument that much of the inflation is caused by pricing practices and that the wages of hourly workers are not the only factors in inflation.

Thus, some of the factors relevant to whether the steel pact is good or bad, or to whether any subsequent price increases may be justified, are these, which Mr. Mitchell has noted:

- Total employment costs in the steel industry since the war have averaged 33 to 35% of total revenues, inclusive of administrative, clerical and professional costs. Materials have averaged 44 to 47%.
- Total employment costs as a percentage of total revenues have been lower in most postwar years than in 1940, when it was 37%. Because of the increasing importance of administrative, professional and clerical workers, total employment costs per unit of steel output for all employees have increased faster than for the wage earners alone.
- Total employment costs of wage earners per unit of steel output were 131% above the 1940 level at the end of fiscal 1959. Basic steel prices rose an average of 178% during the same period.
- Output per wage employee manhour in steel increased 74% from 1940 to fiscal 1959. The figure is only 58% when salaried employees are included.
- Steel prices have increased every year since the war, including periods of recession and low production, and have risen faster than wholesale prices in general and much faster than retail prices. Prices in steel-consuming industries generally conformed to the upward trend but less sharply.
- All-employee employment costs per ton of steel increased by $18 from 1951 to 1959. Wage-employee employment costs went up only $12. The average realized price of steel per ton went up $48.

By that time, the economic and political implications of the settlement will have jelled and headway on the work rules issue can be gauged.

NLRB Promotes Joint Board Use

The National Labor Relations Board has again refused to get mixed up in a jurisdictional dispute that can and should be taken to the construction industry's National Joint Board for the Settlement of Jurisdictional Disputes.

In doing so, the NLRB has reminded contractors that use of a subcontractor clause is an easy way to force subcontractors to comply with the Joint Board procedure and thus promote the industry's efforts to achieve voluntary settlements.

Subcontractor in this case was Pittsburgh Plate Glass Co., which was doing glass and curtain wall work on a Reynolds Metal Co. project in Michigan. Over the protest of iron workers, Pittsburgh assigned the disputed work to its own employees, who were glaziers. The iron workers struck the project to force assignment of the work to them.

Pittsburgh filed unfair labor practice charges against the iron workers but was denied access to the NLRB because the only forum legally available to it was the National Joint Board.

Limitation on its remedy stemmed from the fact that the subcontract Pittsburgh signed contained a clause requiring adherence to Joint Board rules, regulations and procedures "in the assignment of work and/or settling of jurisdictional disputes." It thus lost its right to an NLRB hearing of the dispute under Section 10(k) of the Taft-Hartley Act.

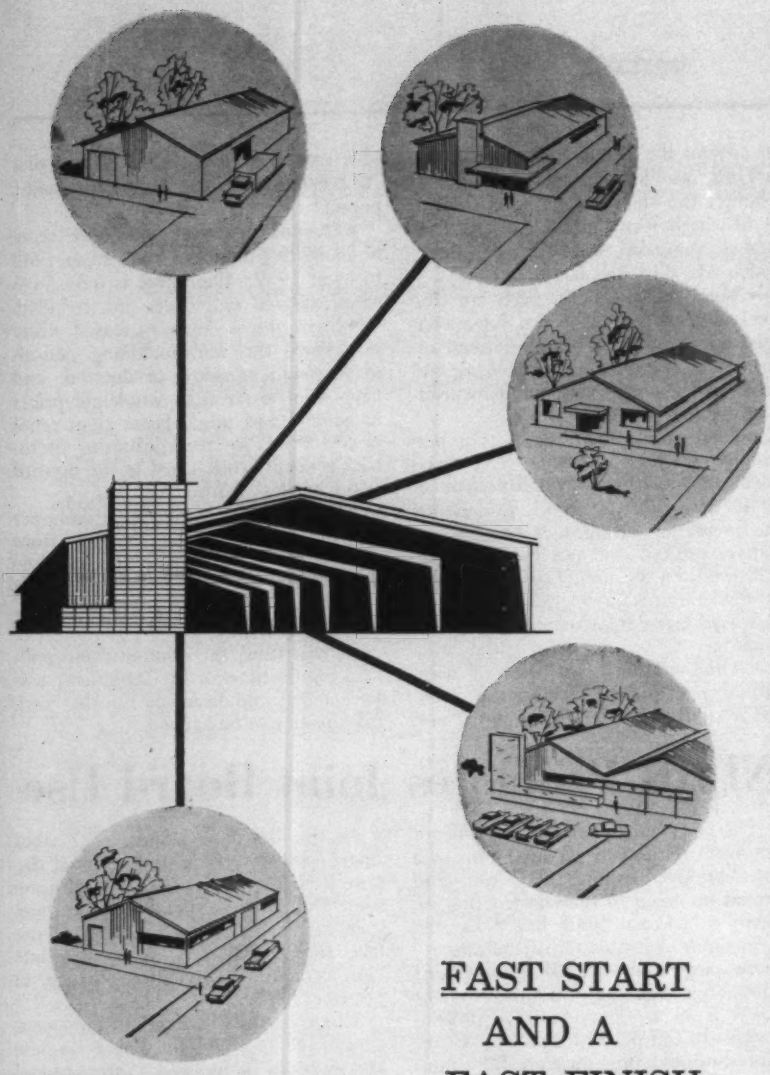
As the law now stands, the Labor Board cannot settle a jurisdictional dispute if all the parties have agreed upon some voluntary settlement procedure, such as the Joint Board. Object of the law, the NLRB says, is to preclude "government intervention whenever possible."

Unions in the Pittsburgh dispute were committed to the Joint Board on several grounds, including an international agreement to submit such disputes to the Joint Board. The dispute did go to the Joint Board, which awarded the work to a combined crew of iron workers and glaziers. Pittsburgh refused to recognize the award and completed the work with its own glaziers.

Stressing the relative informality through which contractors can become bound by the Joint Board procedure, the NLRB said:

"It may be noted that the language of Section 10(k) does not require, and the board has never held, that the agreed-upon method envisaged by that section be set forth in a single instrument, signed by the parties to the dispute. Indeed, as the chairman of the Joint Board, R. J. Mitchell testified, jurisdictional agreements between trade unions are virtually always signed only by the disputing unions, and not by the employers involved, who agree to be bound thereunder in separate instruments, as here, or by other means.

(Labor continued p. 112)



FAST START
AND A
FAST FINISH—

when you design your building around an Inland Rigid-Frame

INLAND BUILDINGS SAVE YOU MONEY AND TIME ON THE JOB

Your new building will be partly completed before you start when you build around Inland RIGID-FRAME modules. The load-bearing structurals are fabricated in the factory to save you time on the job. Design and load-bearing data are available to save you time on the drawing board.

Use of the RIGID-FRAME building provides a column-free interior 120 feet wide. The 100% clear, useable space simplifies functional planning and layout.

You finish your job in less time because erection is faster. And you save money because Inland RIGID-FRAME buildings often cost far less than those of conventional construction. Write for the name of the Inland Steel Buildings dealer nearest you and a copy of our colorful 20 page catalog.

INLAND **RIGID-FRAME** STEEL BUILDINGS
INLAND STEEL PRODUCTS COMPANY
DEPT. A, 4147 WEST BURNHAM STREET, MILWAUKEE 1, WISCONSIN
MB-24

CCA Gets Set to Teach Labor Law to Contractors

The increasing complexity of labor relations has induced the Canadian Construction Association to set up a long-term program of employer education in the field of labor law.

Present plans call for a full and regular schedule of university seminars conducted on a regional basis from the Atlantic to the Pacific.

The program stems from the conclusion that contractors are not familiar with their legal rights in dealing with unions and that they do not perform to best advantage at the bargaining table. An educational program is considered essential.

Several pilot seminars on labor law, held last year, proved successful.

An association spokesman said these indicated that even contractors experienced in collective bargaining have a "rather limited" knowledge in the labor relations field, and that the few pilot seminars merely gave them a "very basic appreciation of the problems and their complexity."

Labor in Brief . . .

• **Work rule study starts** — Kaiser Steel Corp. and the United Steelworkers have completed organization of their joint committee to study problems stemming from automation, technological changes and local work practices—problems that Kaiser says can't be solved unilaterally. The committee starts work early this month and has the power to negotiate changes in work rules.

• **For equal opportunity**—The President's Committee on Government Contracts warned the public last week that its complaint process is of vital importance to the enforcement of the nondiscrimination clause now required in all government contracts. Any individual or organization can file a complaint with the committee for general or subcontractor discrimination in employment because of race, religion, color or national origin.

• **Price cuts urged**—Raymond Saulnier, chairman of the President's council of Economic Advisers, has told industry the time has come for it to share the responsibility for economic stability. There's only one way to keep prices under control during periods of rapid economic growth, he said, and that is to cut prices whenever productivity increases faster than labor costs.

OFFICIAL PROPOSALS

Bids: January 28, 1960.

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, Public Buildings Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A. M., eastern standard time on the 28th day of January 1960, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, G. L. NICKERSON, District Engineer, 353 Broadway, Albany 1, New York						
Rensselaer (Rte. 40)	FARC 60-4	Schaghticoke-Schaghticoke Hill, S.H. 477 Melrose-Schaghticoke Hill, S.H. 1425A Project F-504(10)	0.52	8" Cem. Conc. Pavt. 24' Wide = 0.49 Mi. Misc. Work = 0.03 Mi. Prestressed Conc. Beam Br. 125'	$21,000 Plans $5	$376,000
Schenectady (Rte. 159)	FARC 60-6	Mariaville-Montgomery Co. Line, S.H. 789 Project F-1024(2)	0.03	Asph. Conc. Pavt. = 0.02 Mi.; Misc. Work = 0.01 Mi. Corr. Multiplate Arch Br. 20.8' Span	$4,800 Plans $5	87,000
Warren	M60-1	Brayton Ave: Canal Bridge over Glens Falls Feeder	....	Strengthening Exist. I-Beam Bridge	$500 Plans $10	8,700
DISTRICT No. 2, L. KETCHUM, District Engineer, 109 No. Genesee Street, Utica 1, New York						
Oneida	M60-2	Roberts Bridge over Erie Canal Br. E-61, Verona, New York	....	Clean. & Paint. 1 Bridge	$200 Plans $10	3,400
DISTRICT No. 3, EARLE E. TOWLSON, Acting District Engineer, 333 E. Washington Street, Syracuse, New York						
Oswego	U. S. 101	Lock 0-7, Oswego Canal City of Oswego	....	New Gates, Lowering Upper Sills and Misc. Work	5% of Bid Plans $10	(Confidential)
Oswego	U. S. 103	Lock 0-6, Oswego Canal City of Oswego	....	New Gates, Lowering Lower Sills and Misc. Work	5% of Bid Plans $10	(Confidential)
DISTRICT No. 4, B. F. PERRY, District Engineer, Barge Canal Terminal, Rochester 1, New York						
Monroe (Rte. 104)	FAC 60-1	Rochester City-Ridge Road West (Kodak Bridge and Approaches) Project UG-402(9)	0.10	Asph. Conc. Type 2A Pavt. = 0.09 Mi. Misc. Work = 0.01 Mi. R.R.G.S., Comp. I-Beam 60.74'	$10,000 Plans $5	188,000
DISTRICT No. 5, E. G. H. YOUNGMANN, District Engineer, State Office Bldg., 65 Court Street, Buffalo 2, New York						
Cattaraugus (Rte. 18)	FARC 60-25	Bradford-Carrollton, Pt. 1, S.H. 8007 Bradford-Carrollton, Pt. 2, S.H. 8018 & 8018A Bradford-Carrollton, Pt. 3, S.H. 8144 Project F-30(5)	6.78 (2.75 Acc.)	9" Cem. Conc. Pavt. 24' Wide = 6.04 Mi. Asph. Conc. Pavt. = 0.74 Mi. (Access Rds. = 2.75 Mi. Asph. Conc. Pavt.)	$145,000 Plans $5	2,653,000
Cattaraugus (Rte. 242)	FARC 60-9	Little Valley-Randolph, Pts. 1 & 2, S.H. 8149 Little Valley-Randolph, Pt. 3, S.H. 5258A Project F-603(9)	4.67	Asph. Conc. Pavt. = 4.65 Mi. Misc. Work = 0.02 Mi. Corrug. Plate Twin Arch Bridge 36'	$47,000 Plans $5	851,000
Niagara	FAC 60-14	City of Niagara Falls: Hyde Park Boulevard (B Street to Jerauld Avenue) Project U-1128(2)	1.95	Asph. Conc. Pavt. = 1.88 Mi. Misc. Work = 0.07 Mi. Extension of R. C. Twin Box Br. 24'	$100,000 Plans $5	1,837,000
Niagara	FASS 60-1	Lockport Road (County Road No. 132) Project S-528(2)	3.05	9" Unreinf. Cem. Conc. Pave. 24' Wide = 2.96 Mi. Misc. Work = 0.09 Mi.	$35,000 Plans $5	629,000
DISTRICT No. 6, J. H. THOMAS, District Engineer, State Office Bldg., 30 West Main Street, Hornell, New York						
Steuben (Rte. 17)	FARC 60-7	Painted Post-Addison, Pt. 2, S.H. 5094 Painted Post-Addison, Pt. 3, S.H. 5349 Project F-593(11)	3.97	Asphalt Concrete Pavement	$28,000 Plans $5	509,000
DISTRICT No. 7, R. W. SWEET, District Engineer, 444 Van Dusee Street, Watertown, New York						
Jefferson & Lewis (Rte. 12)	FARC 60-3	Burrs Mills-South Champion, S.H. 626 Lewis Co. Line-South Champion, S.H. 1129 Copenhagen, S.H. 937 Project F-1043(4)	1.50	Asph. Conc. Type 1A Pavt. = 1.38 Mi. Misc. Work = 0.12 Mi.	$20,000 Plans $5	397,000
St. Lawrence (Rte. 345)	FARC 60-5	Madrid-Waddington, Pt. 1, S.H. 1262 Madrid-Waddington, Pt. 2, S.H. 966 Waddington Village, S.H. 1125 Project S-110(2)	8.30	Asph. Conc. Type 1A Pavt. = 8.26 Mi. Misc. Work = 0.04 Mi.	$75,000 Plans $5	1,364,000
DISTRICT No. 8, K. G. RAUER, District Engineer, Pleasant Valley Road, Poughkeepsie, New York						
ORANGE (Rte. 17K)	RC 60-8	Bloomingburg-Bullville, S. H. 8166	0.35	Asph. Conc. Pavt.	$3,600 Plans $5	65,000
DISTRICT No. 9, J. C. FREDERICK, District Engineer, 71 Frederick Street, Binghamton, New York						
Broome (Rte. 369)	FARC 60-10	Chenango Towpath, S.H. 175 Port Crane-North Fenton, S.H. 963 Project S-815(2)	6.48 (0.21 Acc.)	Asph. Conc. Pavt. Repair Exist. Br. No. 1 Corrug. Plate Twin Arch Br. 25' Comp. W.F. Beam Br. 104.5'	$85,000 Plans $5	1,497,000
Delaware, N. Y. & Wayne, Penn.	I. Br. 60-1	Lordville Interstate Suspension Bridge (Ch. 360 Laws 1936)	0.08	Repairs & Alterations (4" Timber Deck)	$800 Plans $5	15,000
DISTRICT No. 10, M. E. GOUL, District Engineer, 325 W. Main Street, Babylon, L. I., New York						
Kings (Int. Tour. Rte. 278)	FIGE 60-1	Interstate Route Connection 512, Gowanus Expressway (36th Street to 53rd St.) Project I-U-278-1(46)	0.84 (1.48 Acc.)	Reinf. Conc. Roadway (on Viaduct) = 0.82 Miles Misc. Work = 0.02 Mi. Sheet Asph. Pavt. (Streets and Ramps) = 1.42 Miles; Cem. Conc. Pavt. (Ramps) = 0.06 Mile; Steel Elevated (Viaduct) Struct. 83 Sp. 4,322.5'	$700,000 Plans $10	12,867,000
Nassau & Suffolk	FARC 60-2	Mineola Village-Jericho Turnpike, S.H. 1785 Wantagh-Central Park, Pt. 3, S.H. 42-3, Massapequa-Glen Cove, S.H. 9017; Coram-Middle Island East, S.H. 8291 Project F-1000(8); F-488(5); S-212(3); S-377(4)	2.54	Drainage & Misc. Work	$50,000 Plans $5	912,000
Nassau	FASH 60-20	Jericho Turnpike-Floral Park Village	0.76	Demolition of Buildings	$16,000 Plans $5	297,000
(Rte. 25)	FARC 60-12	Jericho Turnpike, S.H. 9020 Project U-1000(3)				
New York	FAHRD 60-1	Harlem River Drive (Contract No. 139A) (143rd Street to 145th Street and 153rd Street to 155th Street) Project U-1133(6)	0.35	9" Cem. Conc. Pavt. with Carb. Black = 0.13 Mile Asph. Mac. Pavt. = 0.15 Mi.; Asph. Conc. Pavt. = 0.07 Mi. Rehabilitating Macomb's Dam Bridge	$50,000 Plans $5	896,000
New York (Int. Tour. Rte. 95	FICBE 60-1	Interstate Route Connection 511 (Cont. 3) Cross Bronx Expressway (Highbridge Interchange) Project I-95-1(36)	0.13	9" Cem. Conc. Pavt. 26' Var. Wide = 0.09 Mi.; Misc. Work = 0.04 Mi. Highbridge Interchange Ramps; 3 Hy. Sups. Plate Girders 385', 411 'and 317'; Rehabilitating Struct. No. 20 Plate Girder: Misc. Work on Alexander Hamilton Bridge	$180,000 Plans $10	3,313,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage), Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "Information for Bidders" in the Public Works Specifications, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1959, as Amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bond shall conform to the provisions of the Highway Laws, as set forth in "Information for Bidders".

The right is reserved to reject any or all bids.

J. BURCH McMORRAN
SUPT. OF PUBLIC WORKS

OFFICIAL PROPOSALS

Bids: February 2, 1960

Road Work

Warren County, New York

Notice is hereby given that the Warren County Board of Supervisors will receive sealed bids until 10:30 A.M. Eastern Standard time on February 2, 1960 by Leslie Hayes, Clerk of the Board of Supervisors, Warren County, Lake George, New York for:

GLENS FALLS EAST-WEST BYPASS
COUNTY ROAD 70

Maps, plans, specifications and proposal forms may be seen and obtained at the office of Herrick Osborne, County Superintendent of Highways, Warrensburg, New York.

The deposit for plans and proposal forms for the Contract is $20.00. A refund will be made in full to bidders with the return of each set in good condition, within 30 days of award, or rejection of bids.

Special attention of bidders is called to the New York State Department of Public Works, Division of Construction Specifications dated January 2, 1957, which may be obtained from the Department of Public Works, Alfred E. Smith Building, Albany, New York.

Proposal must be submitted in a sealed envelope with the name of the project plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of Romney C. Patterson, Warren County Treasurer for the sum of $18,000.00. The retention and disposal of the bidding check, execution of Contract and bond shall conform to the provisions of the Highway Laws as set forth in "Information for Bidders."

The right is reserved to reject any or all bids.

Herrick Osborne
Superintendent of Highways
Warren County, New York

Bids: February 8, 1960

Sewage Collection and Treatment Project

ATHENS-SAYRE JOINT AUTHORITY
Bradford County, Pennsylvania

Sealed proposals for separate Contracts stated below will be received by ATHENS-SAYRE JOINT AUTHORITY at the residence of Mr. Benjamin Leahy, Secretary, 534 Stevenson Street, Sayre, Pennsylvania, until 2:00 P.M., Eastern Standard Time, February 8, 1960; and at 2:15 P.M., or shortly thereafter, the same day, they will be publicly opened and read at the Athens Area Joint High School, 220 South River Street, Athens, Pennsylvania. Proposals will be for furnishing all necessary labor, materials, and equipment, and performing all work of the separate Contracts. Each proposal shall be accompanied by a certified check or bid bond in an amount not less than ten (10) percent of the bid total, all in accordance with the Contract Documents.

Copies of the Contract Documents, including Drawings and Specifications, will be on file for inspection purposes only at the office of William L. Wilson, Authority Co-Solicitor, 407 South Main Street, Athens, Penna. They may also be seen at the office of Gannett Fleming Corddry and Carpenter, Inc., Engineers, 600 North Second Street, Harrisburg, Pa., from whom only they may be obtained, upon deposit of the following indicated amounts per set. Not more than two (2) sets of any particular Contract will be permitted a prospective bidder. Checks shall be made payable to Gannett Fleming Corddry and Carpenter, Inc.

Contract One: CONSTRUCTION OF INTERCEPTORS, FORCE MAINS, EXTENSIONS TO EXISTING SANITARY AND STORM SEWERS, AND APPURTENANCES $60.00

(Part A) At Athens: Construction of storm sewers, sanitary sewers, force mains, and flood control and diversion chambers.

(Part B) At Sayre: Construction of storm sewers, sanitary sewers, force mains, and flood control and diversion chambers. Included as part of the sanitary sewers is an inverted siphon carrying an intercepting sewer under Shepherd Creek.

(Bidders will be permitted to submit bids for Part A or Part B as separate contracts, and also for Part A plus Part B as a combined contract; however, it will be mandatory for all bidders submitting a bid for Part A plus Part B as a combined contract to also submit bids for Part A and Part B as separate contracts. The right is reserved to award separate contracts for Part A and Part B, or for a combined contract consisting of Part A plus Part B, whichever may appear to be in the best interest of the ATHENS-SAYRE JOINT AUTHORITY.)

Contract Two: GENERAL CONSTRUCTION OF A SEWAGE TREATMENT PLANT, PUMPING AND EJECTOR STATIONS $40.00

Contract Three: PLUMBING WORK IN CONNECTION WITH A SEWAGE TREATMENT PROJECT $30.00

Contract Four: HEATING WORK IN CONNECTION WITH A SEWAGE TREATMENT PROJECT $30.00

Contract Five: ELECTRICAL WORK IN CONNECTION WITH A SEWAGE TREATMENT PROJECT $30.00

Full refund will be made only to actual bidders on the Contracts stated above, for return of one (1) set, no more, of a particular Contract in good condition within fifteen (15) calendar days after bid opening; refund for return of all other sets within the same period will be fifty (50) per cent of deposit. No refund will be made for Contract Documents returned later than fifteen (15) calendar days after bid opening.

ATHENS-SAYRE
JOINT AUTHORITY
Bradford County
Pennsylvania

Gannet Fleming Corddry
and Carpenter, Inc.
Engineers

Bids: January 28, 1960

Soil Explorations and Foundation Investigations

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 a.m. Eastern Standard Time on January 28, 1960, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, New York for:

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON: WEST STREET TO HERALD PLACE ARTERIAL, CITY OF SYRACUSE, ONONDAGA COUNTY, WHICH CONSTITUTES CONTRACT SPEC. NO. SM-150 . . . AND INTERSTATE ROUTE 570 BEAR STREET TO CLINTON STREET, NEW PROJECT NO. I-690-3(1)214, CITY OF SYRACUSE, ONONDAGA COUNTY WHICH CONSTITUTES CONTRACT SPEC. NO. FA-SM-152.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, N. Y.

(b) Mr. E. E. Towlson, District Engineer, New York State Department of Public Works, 333 East Washington Street, Syracuse, New York.

(c) Mr. William Mende, Principal Building Construction Engineer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50 percent of deposit.

The Engineer's estimate of cost for this work is $35,375.00.

Proposal for this contract must be submitted in separate sealed ennvelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $2,000.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders."

The right is reserved to reject any or all bids.

J. BURCH McMORRAN
SUPERINTENDENT OF
PUBLIC WORKS

Bids: February 16, 1960

George Washington Bridge Lower Level Expansion New Jersey Approach Administration Building

THE PORT OF NEW YORK AUTHORITY
CONTRACT GWB-190.026

Sealed proposals for the construction of a new Administration Building at the New Jersey Approach to the George Washington Bridge in the Borough of Fort Lee, New Jersey, will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, February 16, 1960, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the Office of the Assistant Chief Engineer for Design of the Authority, Room 1115. Documents will be furnished upon deposit of $100 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $100 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract directly to the Authority will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
S. Sloan Colt, Chairman

New York, January 14, 1960

NOTICE

Postponed bid date: January 22, 1960
Original bid date: January 14, 1960

Bids: January 22, 1960

Feeder Road Program

MINISTRY OF PUBLIC WORKS
REPUBLIC OF EL SALVADOR
BIDS: JANUARY 14, 1960
NOTICE TO CONTRACTORS

The Ministry of Public Works of the Republic of El Salvador advises that on January 14, 1960,* bids will be received for the construction of a major portion of the proposed Feeder Road Program of the country. The Specifications, Plans and Contract Documents will be for sale in El Salvador on December 9, 1959.

All Contractors interested in taking part in this bidding are requested to obtain the necessary Documents, Plans and Specifications from the Office of the Proveedor Especifico de Obras Publicas Edificio Morazan, 8ª C. P., San Salvador, El Salvador, C. A. All requests must be accompanied by a certified check in the amount of One Hundred Sixty Dollars which will not be returned.

MINISTRY OF PUBLIC WORKS
REPUBLIC OF EL SALVADOR,
C. A.

*New bid date January 22, 1960.

Bids: February 16, 1960

Narrows Bridge Cables and Suspenders

TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY

SEALED BIDS WILL BE RECEIVED BY Triborough Bridge and Tunnel Authority at its office, Administration Building, Randall's Island, Manhattan, New York 35, N. Y., as follows:

Until 11 A.M. Tuesday, February 16, 1960

For Narrows Bridge Contract No. NB-3, Cables and Suspenders. The bid must be accompanied by a deposit in the amount of $500,000.00.

Plans, specifications and contract documents may be purchased at the office of the Authority for $25.00, which will not be refunded.

OFFICIAL PROPOSALS

Bids: March 3, 1960

Stoplog Guides and Seats for Yanhee Multipurpose Project

Kingdom of Thailand
Royal Irrigation Department
Bangkok, Thailand

INVITATION FOR BIDS—NO. YS-2-13

The Royal Irrigation Department of the Kingdom of Thailand hereby invites sealed written bids for furnishing and delivering the following goods, equipment, and materials either fob Contractor's shipping point or cif Bangkok Wharf, Thailand, for the Bhumiphol Dam, Yanhee Multipurpose Project, Kingdom of Thailand, in accordance with the Contract Documents, for:

Furnishing one (1) complete set of stoplogs and one (1) lifting frame for use on one (1) penstock intake, together with stoplog guide seats for use on eight (8) penstock intakes, including all anchor bolts.

Bids will be opened at 10:00 A.M., March 3, 1960. Copies of Contract Documents, Invitation for Bids No. YS-2-13, Stop-logs, Stop-log Lifting Frame, and Stop-log Guide Seats, may be obtained by qualified Bidders on written request to:

Royal Irrigation Department
Attention: Thai Liaison Engineer
c/o Engineering Consultants, Inc.
1901 South Navajo Street
Denver 23, Colorado

Each request must be accompanied by a check or money order, payable to the Royal Irrigation Department, in the amount of U. S. $10.00 for each copy of the Contract Documents requested. The remittance is nonreturnable.

M. L. Xujati Kambhu
Director General
Royal Irrigation Department
Kingdom of Thailand
Bangkok, Thailand

Bids: February 24, 1960

Narrows Bridge—Brooklyn Tower & Staten Island Tower

TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY

SEALED BIDS WILL BE RECEIVED BY Triborough Bridge and Tunnel Authority at its office, Administration Building, Randall's Island, Manhattan, New York 35, N. Y., as follows:

Until 11 A.M. Wednesday, February 24, 1960

For Narrows Bridge Contract No. NB-2B, Brooklyn Tower. The bid must be accompanied by a deposit in the amount of $250,000.

and

For Narrows Bridge Contract No. NB-2S, Staten Island Tower. The bid must be accompanied by a deposit in the amount of $250,000.

Bidders may submit bids for either one or both of the above contracts.

Plans, specifications and contract documents may be purchased at the office of the Authority for $25.00, which will not be refunded.

OFFICIAL PROPOSAL

RATE: $2.40 per line (or fraction) per insertion.

CLOSING DATE: 10:30 a.m. Friday for issue out following Thursday.

SEND COPY: Official Proposal Division, Engineering News-Record, P. O. Box. 12, New York 36, N. Y.

OFFICIAL PROPOSALS

District of Columbia—Highway Construction—Dept. of Highways & Traffic, December 30, 1959. CONSTRUCTING THE ANACOSTIA FREEWAY-BRIDGE OVER OXON RUN BAY, FEDERAL AID INTERSTATE PROJECT NO. I-295-2(17)0—Invitation No. C-6060-H, consisting of approximately the following quantities: 2,650 cu. yds. Class BB Concrete; 1,570,000 lbs. Reinforcing and Structural Steel; 13,670 lin. ft. Steel "H" Beam Piles and 1,630 cu. ft. Stone Masonry Facing (Minimum wage rates for this project have been predetermined by the U. S. Department of Labor, as required by law. They are included in Addendum No. 1 which will accompany the specifications.) Bid forms, plans and specifications are now available from Supervisor, Bid & Contract Division, Procurement Office, D. C., Room 404, 499 Pennsylvania Avenue, N.W., upon deposit of a certified check for $20.00 per set, payable to the D. C. Treasurer (Phone NA 8-6000, Ext. 2378). SEALED BIDS to be opened 3:00 PM, EST, February 3, 1960, in Room 424, 499 Penn. Ave., N.W.

District of Columbia—Highway Construction—Dept. of Highways & Traffic, January 4, 1960. WASHINGTON CHANNEL BRIDGE SUBSTRUCTURE AND GRADING, Federal Aid Interstate Project No. I-95-1 (27) 1, consisting of approximately 97,060 cu. yds. backfill and fill, 72,500 lin. ft. cast-in-place concrete friction piles, 13,961 cu. yds. concrete in tunnel, piers, abutments and walls, 1,670,500 lbs. reinforcing steel, and 27,400 cu. ft. Class B stone masonry facing (Invitation No. C-60107-H). The wage rates for this interstate project have been predetermined by the Labor Department. On January 21, 1960, at 2:00 PM, EST, in Room 500, District Building, 14th & E Streets, N.W., Washington 4, D. C., a pre-bid meeting will be held to answer questions bidders may have on the project. Bid forms, plans and specifications are now available from Supervisor, Bid & Contract Division, Procurement Office, D. C., Room 404, 499 Pennsylvania Ave., N.W., upon deposit of a certified check for $50.00 per set, payable to D. C. Treasurer (Phone NA 8-6000, Ext. 2378). SEALED BIDS to be opened 3:00 PM, EST, February 1, 1960, in Room 424, 499 Penn. Avenue, N.W.

Bids: February 4, 1960

Alterations of and Additions to the Setauket Elementary School

Separate sealed proposals will be received by the Board of Education, Union Free School District No. 2, Setauket, Suffolk County, Long Island, New York, until 2 P.M., E.S.T., Thursday, February 4, 1960, for the execution of each of the following Contracts for the appropriate work connected with the Alterations of and Additions to the Setauket Elementary School, located at Main Street, Setauket, Long Island, New York, all in accordance with Drawings, Specifications, and other Contract Documents prepared by Richard H. Smythe and Henry M. Randall, Associated Architects.

Contract No. 1—General Construction
Contract No. 2—Plumbing
Contract No. 3—Heating and Ventilating
Contract No. 4—Electrical

The work includes, in general, the following:

a. Conversion of one classroom in the existing school to offices.

b. The addition to the present school includes 12 classrooms, 1 kindergarten, assembly hall, and connecting corridor from existing building plus a new heating room and plant for the addition.

After receiving the proposals they will be immediately opened in the Auditorium of the Junior High School.

The Drawings, Specifications, and other Contract Documents may be examined at the following locations, after 9:00 A.M., Tuesday, January 14, 1960.

Office of Henry M. Randall, Associated Architect—314 Main Street, Port Jefferson, Long Island, New York.

Dodge Reports, 119 West 40th Street, New York, New York.

Copies of the Documents may be obtained by bidders from the Architect upon deposit of the following amounts for the first set:

For General Construction Work	$50.00
For Plumbing Work	$25.00
For Heating and Ventilating Work	$25.00
For Electrical Work	$25.00

The deposit will be returned to the bidder upon return of the Documents in good condition within ten (10) days after the opening of the bids, provided a formal proposal has been submitted by the bidder.

Requests for plans and specifications should be addressed to the office of Henry M. Randall, Associated Architect, Port Jefferson, New York.

Each bidder must deposit with his bid the security therefor mentioned and described in the Instructions to Bidders.

The Board of Education reserves the right to reject any or all bids, or to accept any bid which, in the opinion of the Board, will be to the best interest of the School District.

No bid shall be withdrawn pending the decision of the Board of Education, which decision shall be made within 30 days after date of the bid opening.

Dated: January 7, 1960

Board of Education
Union Free School District No. 2
Setauket, Long Island, New York

BY: Mr. Alphonso Jesaitis
Clerk

Bids: February 16, 1960

Philadelphia, Penna. Procurement Department Water Department

Sealed bids will be received in Room 313, City Hall Annex, until 2:30 P.M. (E.S.T.) on Tuesday, February 16, 1960, and opened at that time, for Bid No. 2464—Work No. SD-243-SW.

Intercepting Sewer in Vare Avenue, Delaware River Port Authority R/W, Private Property and 26th Street between Mifflin Street and Drainage R/W (former Shunk Street) South of Passyunk Avenue (LOWER SCHUYLKILL EAST SIDE INTERCEPTING SYSTEM).

PRINCIPAL ITEMS OF WORK

Excavation in Tunnel	6,450 cu. yds.
Vacuum Processing in Tunnel	19,210 sq. ft.
5'3" dia. Concrete Sewer in Tunnel	4,193 lin. ft.
Manholes (on Tunnel or in Shafts)	8

Proposal forms, questionnaires and specifications may be obtained from the Water Department, in Room 1132, City Hall Annex, Juniper Street and Filbert Street, Philadelphia 7, Penn. Blueprints of plans may be purchased at bidder's expense, directly from the Keystone Blue Paper Company, 1230 Arch Street, Philadelphia 3, Penna.

No bids will be received unless bidder is qualified by the Procurement Commissioner. The questionnaire form with all questions fully answered must be filed with the Water Commissioner, 1113 City Hall Annex, at least one (1) week prior to the date of opening bids.

Each proposal must be accompanied by security in form and amount as set forth in the proposal form.

U. S. Government

FEDERAL AVIATION AGENCY, Sealed Bids will be received at the office of the Chief, Materiel Contracts Branch, Room 2615, T-5 Building, 16th & Constitution Avenue, Washington 25, D. C., until 2:00 P.M., E. S. T., February 23, 1960, for the construction of the structural portion of the Terminal Building at the Dulles International Airport near Chantilly, Virginia. Plans, specifications and bid forms will be available upon request at the address given above. A deposit of $25.00 will be required for each set of plans and specifications. Refunds will be made for no more than two sets.

Department of Commerce, Bureau of Public Roads, January 14, 1960. SEALED BIDS will be received at the office of E. L. Tarwater, Division Engineer, Bureau of Public Roads, 1554 Columbia Pike, Arlington 4, Virginia, until 11:00 a.m., E.S.T., February 25, 1960, for Contract 7, Concrete Deck and Bridge Railing, Woodrow Wilson Memorial Brdige over the Potomac River. The construction required consists of the concrete deck on the west and east approach spans of the bridge for lengths of 2,310 feet and 3,350 feet respectively, and aluminum bridge railing on the parapets of west approach retaining walls, the west and east approach spans, the bascule span and the east abutment wingwalls. The required construction is located partially in the City of Alexandria, Virginia, partially in the District of Columbia, and partially in Prince Georges County, Maryland. The approximate quantities of the items involved are 15,600 cu. yd. of concrete, 2,940,000 lb. of reinforcement steel, and 12,630 lin. ft. of bridge railing. Minimum wage rates have been fixed as required by law. Plans, specifications, and bid forms are available upon request at the address given above. F. W. Cron, Regional Engineer.

ENGINEERS AND MATERIALS INSPECTORS WANTED

TVA has openings on a large hydro- and steam-electric program for experienced civil, structural, electrical, and mechanical engineers in its Division of Design located in Knoxville, Tennessee, and for materials engineers and inspectors of materials located in various district offices, principally in the north and east.

These positions are at the following grades and rates of pay:

Civil, Mechanical, Electrical, and Materials Engineers, grades SD-2 and -3 $6200-$7150.

Inspectors of Materials, grades SE-5 and -6 $5825-$6625.

The engineering jobs require a college degree in engineering or its equivalent with from one to three years of experience in design and specification work, or in inspection and testing work for materials engineers. The inspector of materials jobs require some college training in engineering or equivalent training and experience in making engineering inspection and tests of mechanical structural, and electrical equipment and materials.

All jobs carry automatic within-grade increases for satisfactory service, liberal vacation leave, sick leave, and retirement, hospitalization, and insurance benefits.

Write to:

TENNESSEE VALLEY AUTHORITY
Division of Personnel,
Knoxville, Tennessee

ADDRESS BOX NO. REPLIES TO: Box No. Classified Adv. Div. of this publication. Send to office nearest you.
NEW YORK 36: P. O. Box 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

• POSITIONS VACANT

Have opening for several recent Civil Engineer Graduates with military obligations completed who desire to learn the construction business. Ambitious, aggressive, dependable, use no intoxicants, willing to start in the field on industrial building and heavy construction, and willing to move. Must be single. We operate throughout Kansas and adjacent states; offer excellent opportunity for advancement. Top wages. Martin K. Eby Construction Co., Inc., P. O. Box 1679, Wichita, Kansas.

Bridge Design Engineer, who is able to take charge of project from inception to completion. Salary open. Apply Ivan R. Bray, Director Personnel, City Hall, Sioux City, Iowa.

Senior Sanitary Engineer to act as consultant to public and private officials in the state on matters of sewage treatment and disposal, water supplies and treatment plants. Requires engineering degree and 3 years' experience in the above or equivalent combination of experience and training. Send complete resume to B. Dearington, Connecticut State Department of Health, State Office Building, Hartford, Connecticut.

Wanted—Estimator for General Construction. Excellent opportunity for one who can qualify. Must be familiar with takeoff, pricing, purchasing, sub-contracts. For more details send complete resume to Sollitt Construction Company, Inc., 301 Columbia Street, South Bend (24), Indiana.

Civil Engineer wanted. Qualified civil engineer to head Engineering Department of City of New Berlin, Waukesha County, Wisconsin. Make application in writing before January 18th, 1960, to Joseph Rausch, City Clerk, 15445 W. Grange Road, New Berlin, Wisconsin, showing experience and qualifications and references.

Graduate Civil Engineer under 40. Salary open, depending on experience. Submit resume to Henry F. Beisner, City Engineer, Cedar Falls, Iowa.

National General Contractor desires top flight building construction executive to head up branch office in Chicago area. Only fully qualified persons need apply. Send complete resume of experience and qualifications to: P-3382, Engineering News-Record.

• POSITIONS VACANT

Wanted—Civil Engineer or one who has had the equivalent training by practical experience. Must be familiar with the handling of sewer, water and paving projects and have $15,000.00 to $20,000.00 to invest in old established construction company. P-3422, Engineering News-Record.

Construction Superintendent — Willing to travel for permanent position with fast growing Building Contractor. At present have positions open in the Midwest. Please submit complete resume with salary requirements to P-3420, Engineering News-Record.

Sanitary Engineer with at least two years' experience in design and development of sewerage and waste treatment systems or sewage treatment equipment sales to prepare bids and proposals and to handle technical liaison. Send full details. Yeomans Brothers Company, 1999 N. Ruby Street, Melrose Park, Illinois, Fillmore 4-9600.

Superintendent—Experienced in Incinerator and Sewage Disposal Plant Construction—Job located in Western Pennsylvania. Wingate Construction Co., 34 So. 17th St., Phila., 3, Penna.

Opening for Asst. or Assoc. Prof. interested in Soil Mechanics. M. S. or Ph. D. required. Feb. 1, 1960 or Sept. 1, 1960. Apply chmn. Dept. of Civil Engineering, Univ. of Nebr. Lincoln, Nebraska.

• EMPLOYMENT SERVICE

Better Positions—$6,000 to $35,000. Want a substantial salary increase, more opportunity or different location? This national 49 year old service connects you with best openings. You pay us only nominal fee for negotiations: This we refund when employer pays placement fee. Present position protected. In complete confidence, write for particulars. R. W. Bixby, Inc., 559 Brisbane Bldg., Buffalo, N. Y.

• POSITIONS WANTED

Electrical Engineer, BEE, Reg PE, 37, 14 years diversified experience in industrial power and control, power distribution, and petroleum-electric fields. Will complete fourth foreign contract in March. Speaks French, Spanish. Seeks position with engineering-construction firm. PW-3352, Engineering News-Record.

Superintendent, Project Mgr., Proj. Engineer, age 48, heavy constr., water works, dams, refineries, grad. registered engineer, US citizen, speaks French, Spanish, German, Dutch, prefers foreign assignment. T. deFruyn, Rte. 1, Box 246-A, Las Vegas, Nevada.

Wanted: Employer in heavy construction civil eng., age 29, married, ambitious industrious very anxious to learn. PW-3316, Engineering News-Record.

Executive: Project management. Contract Negotiations & Administration, Claims. 23 yrs. exp. bridges, waterfront, highways, earthwork, etc. U. S. & O. S. PW-3380, Engineering News-Record.

Eng., 38, Estimate, Bid, Field Supervision and layout on sewer, drainage, waterline, concrete & earthwork projects, available S.W. N.E. or Mid-West—Reply 4905 Quitman, El Paso, Texas.

General Superintendent: Have been responsible for administrative direction of project operations, such as, change orders, negotiation of sub-contractors, coordination of contractor's labor forces, processing of owner and sub-contractor requisitions, handling claims, prepared schedules and progress reports, & complete charge of field personnel. Experience in missile sites, hospitals, hangars & servicing docks, factories, & mass housing. Supervised work in Fla., Ill., Pa., N. J., Conn., Ala., & Del. areas Will re-locate. PW-3357, Engineering News-Record.

Estimator-Construction Executive. Age 31— can handle takeoff, pricing, completing bid. Experienced as manager of branch office operation, handling client relations, negotiating, extras and all other phases of activity from estimate to closing. Free to travel or relocate. PW-3354, Engineering News-Record.

Reinforcing Steel Estimator-Detailer, twelve years. Three years supervisory. To locate West or Southwest. PW-3397, Engineering News-Record.

SALES ENGINEERS

A major steel company has need for sales engineers to promote and sell fabricated products in Middle Atlantic States. Excellent opportunities for men 25 to 30 years old with engineering background and a desire for sales work. Attractive salary with company car, expenses and bonus plan.

SW—2763 ENGINEERING NEWS-RECORD
Class. Adv. Div., P.O. Box 12, N. Y. 36, N. Y.

• POSITIONS WANTED

Registered Engineer 20 yrs. experience, can assume immediate full charge all phases of water or sewer projects any size; U.S. or foreign. PW-3401, Engineering News-Record.

Superintendent Construction 20 yrs Institutional Groups, Industrial, Commercial Engineer. PW-3275, Engineering News-Record.

Construction Supt. 32 years of construction experience in Commercial, Public and Industrial. Will assume responsibility with integrity. Location preference Southeast—best references. PW-3144, Engineering News-Record.

Project Manager experienced public works Penna. or New York area. PW-3283, Engineering News-Record.

Project Manager or General Superintendent, fully experienced in all phases of heavy construction, bridges, cofferdams, caissons, all types pile. Mass rock and earth excavation, throughways, railroad construction. Availability—immediately. Will relocate. Phone, Poplar 8-1058, South Charleston, West Va. PW-3396, Engineering News-Record.

Reg. Civil Engineer & L. S.—Age 38 10 years responsible charge munic. eng'r.—land reclamation & development. Highways-drainage. Desires association northeast firm. PW-3424, Engineering News-Record.

B.S. C.E.—29 single—2 years field experience—some office work, take off, checking shop drawings, etc. Desires work with General Contractor—will consider overseas assignment. Please state salary range, location. PW-3435, Engineering News-Record.

Project mgr., supt., estimator, 46, BSCE, heavy const., airports, highways, bridges, industrial, commercial, & institutional bldgs., sewers, sewage disposal plants & water works, shopping centers & subdivision development. Excellent field & office technical experience. Will relocate. PW-3436, Engineering News-Record.

U. S. Navy Civil Engineer Corps Officer, age 26, BSCE. Desires opportunity with bldg. contractor in office and field. Available 1 May 1960. PW-3438, Engineering News-Record.

Superintendent-Estimator-Engineer, C.E. P. E. L. S. (N.J.) experienced public works, utilities, bridges, paving desires position general contractor, N.J. PW-3439, Engineering News-Record.

Attention General Contractors: Chief Estimator and/or Project Manager available for immediate connection. Proven record of four to six million volumn per year in strict competition. Minimum, salary required $12,000.00 per year. Contact William C. Dick, 3507 Cardinal Blv'd., Daytona Beach, Florida. Phone—Clinton 3-9955.

Construction Manager, hvy. const. Desires position with med. sized firm reasonably financed. Engr. background, age 41, exper. U. S. & O.S. all types contracts. Excellent contacts. Good following of personnel. Now employed. Available 90 days. PW-3437, Engineering News-Record.

General Supt. 43, 20 years experience on heavy industrial, commercial, chemical and institutional work. Engineering background. PW-3440, Engineering News-Record.

Executive age 43 Construction Manager 25 yrs experience Highway Airport Sewers Large Industrial Installations. U.S.A. or Foreign. PW-3390, Engineering News-Record.

Executive Management/Field Supervision. Owned firm 15 years; Sewers, Sheeting, Wellpoints, etc., Water. Estimates, Purchasing, Planning, Completion. Age 37, Top References, Surety, Bank, Engineers. Desire West of Miss. or foreign. PW-3395, Engineering News-Record.

DON'T FORGET THE BOX NUMBER

WANTED
ENGINEERING ASSOCIATES

SANITATION WATER SUPPLY
(foreign & domestic)
PETROLEUM (foreign)
GEOLOGICAL & MINING (foreign)
CHEMICAL & PETRO-CHEMICAL
(foreign and domestic)
WATER RESOURCES (foreign)
HYDRO-ELECTRIC (domestic & foreign)
CONSTRUCTION (domestic & foreign)

President and Vice-President levels. Complete charge of your own division.

Drawing account against substantial share of Division profits before tax PLUS income from own secured investment.

Minimum investment $25,000.00

GLOBAL Activity—TOP Recognition

Send complete resume including photo to:

P. O. Box 968,
Station "B", Montreal, Quebec

DESIGNERS — ENGINEERS
McKEE

continues to expand and offers permanent opportunities to designers qualified by experience, and who have continued interest, in design and or checking in:

STRUCTURAL
PIPING
MACHINE DESIGN
CONVEYOR DESIGN
INSTRUMENTATION
PRESSURE VESSELS

as applicable in the design of Steel Plants • Blast Furnaces • Open Hearths Sintering Plants • Oil Refineries • Chemical Plants and Heavy Industry.

Send detailed resume and photo to
G. VICTOR HOPKINS

ARTHUR G. McKEE & CO.
2300 Chester Ave., Cleveland 1, Ohio

ENGINEER
OVERSEAS
on
Multi-Purpose Dam in Thailand
24-Month Contract

Graduate Civil Engineer with five or more years first order survey experience. Prefer engineer with previous concrete dam experience. Ability to supervise and instruct. English speaking Thailand graduate Civil Engineers. Prefer mature man willing to go in bachelor status. Must pass physical examination and security investigation.

- EXCELLENT SALARY
- OVERSEAS BONUS
- COMPLETION INCENTIVE
- EXTRA VACATION ALLOWANCE
- MEDICAL CARE & INSURANCE

Write fully, include complete salary information to:

SVERDRUP & PARCEL ENGINEERING CO.
915 Olive Street St. Louis 1, Mo.

CIVIL ENGINEER

Permanent new position for graduate civil engineer in the salary range of $511 to $588 a month (plus longevity pay). Candidates with outstanding qualifications may be hired above the minimum. Vacation, sick leave, dual pension program, and other fringe benefits. Must be U.S. citizen and possess an EIT certificate. Some related experience desired to work in design and construction of sewer, water, street, sidewalks, and curbs. Travel expenses paid on invitation and moving expenses paid for selected candidate. Personnel Dept., 404 City-County Bldg., Madison 9, Wisconsin.

OPPORTUNITY FOR ASSOCIATES

1. Complete charge of your own Division.
2. Drawing account, Equal income sharing with management, Plus income from your own investment.

ASSOCIATES needed in the following divisions: PETROLEUM, CHEMICAL & PETRO-CHEMICAL, GEOLOGIST & MINING, INDUSTRIAL ENGINEERING, MECHANICAL, ELECTRICAL, ARCHITECTURAL-ENGINEERING, CONSTRUCTION ENGINEERS (2) required. Both domestic and foreign work.

AGE: 40 to 65; President, Executive Vice-President, and Vice-President level.

MINIMUM INVESTMENT required $25,000.00 Principal enjoys TOP recognition in world affairs.

JOB HUNTERS NEED NOT APPLY.

Send complete resume to:

P-2588, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

SALESMAN

Excellent opportunity with one of Philadelphias' oldest and largest distributors of Construction equipment.

SERVICE SUPPLY CORPORATION
20th and Erie Avenue Phila. 32, Pa.

ESTIMATOR—ENGINEER

for established paving and bridge contractor. Excellent opportunity for good take-off man. Experience in pricing, purchasing and sub-contracts also desirable. Send complete qualifications.

P-3423 Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

Specialty Foundry Salesman

Prominent pipe foundry company wants engineer with foundry and specialty sales training, age 35-40. Location on eastern seaboard and territory to cover eastern half of U. S. Will direct specialty sales of cement asbestos pipe fitting, and fabricated flange pipe for petroleum, acid, and chemical industries. Knowedge of metallurgy and chemistry helpful, as well as acquaintanceship with wafer works equipment jobbers and pipe-laying contractors.

All applicants must give complete record of education, employment and earnings, and scope of experience in fields listed.

WALLY E. GEORGE
Management Consultant
425 Cherry S.E., Grand Rapids, Mich.

CIVIL or SANITARY ENGINEERS
— TWO —

- Starting Salary Open
- Career Opportunity
- Consulting Firm of National Reputation
- Advancement potential Unlimited
- Work Varied

Qualifications Desired: Top caliber men having engineering degree with minimum 8 years practical experience in planning, report writing, design and operation of sewage and industrial waste collection, treatment, and disposal facilities. Limited travel: location Pennsylvania area.

P-3239, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CONSTRUCTION SUPERINTENDENT

Must be experienced in high rise reinforced concrete apartment house work. Send resume giving age, education & experience references. Salary commensurate with experience.

P-3421 Engineering News-Record
Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

PURCHASING AGENT

Construction engineering and fabricating company with new plant in northeastern Virginia needs Purchasing Agent with some construction and steel fabricating experience. Both technical and administrative ability required. Excellent housing and living conditions available. Salary $8,000-$10,000 per year. Send resume.

P-3331, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

GRADUATE ENGINEER

to take charge of a mid-west maintenance firm's construction division.

Prerequisites are:

- Registration for the State of Ohio
- Age 30 to 45
- Experience in Commercial & Industrial construction must cover Design, Estimating, Purchasing, Supervision and Direct contact with clients.

We provide base salary, car, bonus, compensatory program and have insurance and retirement program in effect.

Direct resume to
P.O. Box 1380, Columbus, Ohio

CONSTRUCTION ENGINEER

An expanding midwest pharmaceutical company has an opportunity for a field engineer to keep in contact with the details of construction work such as proper backfilling, adequate piping testing, utility piping, all mechanical work, proper concrete mixes, etc. This man should have 4-10 years of varied experience in both mechanical and structural phases of construction. Write stating background and experience to:

Technical Employment Coordinator
THE UPJOHN COMPANY
Kalamazoo, Michigan

Structural Designers
Highway Designers

For industrial and highway design. Minimum 5 yrs. experience. Insurance, Vacation, Bonus, Etc.

MACCABEE, CAMPBELL & ASSOCS.
173 W. Madison St. Chicago 2, Ill.

SEARCHLIGHT SECTION

CLASSIFIED ADVERTISING

Send New ADS or Inquiries to Class. Adv. of Engineering News-Record, P. O. Box 12, New York 36, N. Y., For Jan. 28th Issue Closing Jan. 18th

• CONTRACT WORK WANTED

Design & detailed plans on sub-contract. Water & Sewage works; Plant or underground. CWW-3250, Engineering News-Record. Class Adv. Div. P.O. Box 12, New York 36, N. Y.

• SPECIAL SERVICE

Steel Products Engr. Co.—Reinforcing Steel Detailing—16525 Woodward Avenue Highland Park 3, Michigan.

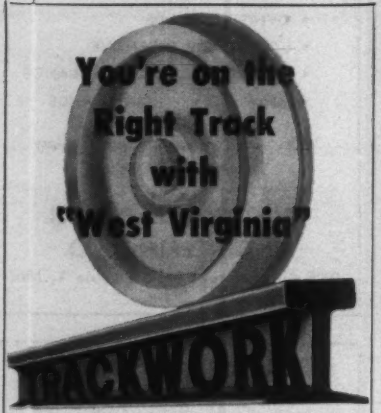
• WANTED

Anything within reason that is wanted in the field served by Engineering News-Record can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
OUR COURSES [illegible] by mail HAVE HELPED THOUSANDS to better [illegible] and [illegible]
Forty-eighth year
WILSON *Engineering Corp*
College House Offices: HARVARD SQ. CAMBRIDGE, MASS.

CONSTRUCTION SUPERVISION
Exclusive Training Course by mail for top positions. Publishers Manual of Advanced Construction Management. Send postcard for details.
National Schools of Construction
Est. 1952
Satsuma, Florida

RAILS—TIES
TRACK ACCESSORIES

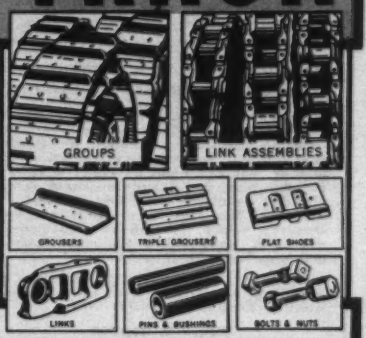


Rails, steel ties, splice and angle bars—whatever your needs, you are assured of rugged construction from quality steel when you specify "West Virginia." "One plant production" allows shipments in carloads. For further information, contact Connors Steel Division, P. O. Box 316, Huntington, West Virginia.

CONNORS STEEL DIVISION
PORTER
H.K. PORTER COMPANY, INC.

MIDWEST STEEL CORP.
502 DRYDEN STREET
CHARLESTON, W.VA.

IMMEDIATE DELIVERY FROM STOCK
EVDEL
quality
TRACK



PRECISION MADE BY MASTER CRAFTSMEN for
- "ALLIS-CHALMERS" HD 5/6 • HD 9/11 • HD 15/16 • HD 20/21
- "CATERPILLAR" D2 • D4 • D6 • D7 • D8 • D9
- "INTERNATIONAL" TD 6 • TD 9 • TD 14 • TD 18 • TD 24

... CRAWLER TRACTORS!

EVDEL INDUSTRIES, INC.
1430 BROADWAY • NEW YORK 18, N. Y. • LA 4-0900
CABLES: "EVDELINDUS"

When you need
RAIL . . . fast

use this section, as many contractors do, as a rail buying directory. It can save you time when you want to know, quickly, where to buy good new or used rail.

Air Compressors
600 CFM
Hydraulic Air Tracs—4 in. and 4½ in. Drills with 12 ft. Feed.
60—900 CFM Compressors
also available.
FOR RENT OR SALE
Subject to prior sale or disposition.
L. B. SMITH INC.
Syracuse, N. Y. Phone GR 5-2196

FOR SALE
American Steel Stiff Leg Derrick,
Model 836-80D, 80 foot boom, 36 foot mast, capacity 6 Tons, 78 foot radius equipped with American Model 75B-3E Triple Drum Electric Hoist and Independent Electric Swingers 440 volt, 60 cycle.
Plymouth 6 Ton Diesel Locomotive
24" gauge equipped with scrubber and International UD-14A Diesel Engine Serial No. 22763.
PRAIRIE CONSTRUCTORS
Pierre, South Dakota

FOR SALE
CABLEWAY complete
Two-48" Drum Hoist
125' Traveling Head Tower
165' Guyed Tail Tower—etc.
Write or wire for complete specifications.
FS-3326—Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

BAILEY BRIDGES
FOR SALE FOR RENT
BAILEY BRIDGE RENTALS & EQUIPMENT
1325 Archer St. P. O. Box 753
San Luis Obispo, Calif.

WANTED
PILE HAMMER
Union 1½A Pile Hammer
W-3233, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

SURVEYING INSTRUMENTS
USED • REBUILT • SALE
RENT • REPAIRING

TRANSITS & LEVELS
Various Makes
NEW & REBUILT
Fully equipped modern shops — all makes and models repaired — all work guaranteed — prompt service — complete line field supplies.
INSTRUMENTS RENTED
Midwest Distributors for W. & L. E. Gurley and Wild Heerbrugg Instruments
NATIONAL BLUE PRINT CO.
Established 1913
210 S. Canal St. Chicago (6), Ill.

FOR SALE

1—Manitowoc Model 3000 Crane 100′ Boom—20′ and 30′ Jibs (50 Ton Caps)

1—Link Belt Truck Crane—Model HC98 90′ Boom and 30′ Jib

BOTH EXCELLENT CONDITION

1—Gradall—Model No. 2460

Call or write:

M. S. KELLIHER COMPANY
10 Tremont St. Boston 8, Mass.
LAfayette 3-7250

PILE DRIVING EQUIPMENT

VULCAN AND McKIERNAN-TERRY
Steam Pile Hammers and Extractors

• DROP HAMMERS • DRIVING CAPS • HOISTS AND BOILERS
• STEEL LEADS • PILE DRIVER HOSE • STEEL SHEET PILING

CONMACO, INC.

DRexel 1-3930
820A KANSAS AVE.,
KANSAS CITY, KANS.

PILING

SURPLUS NEW and USED
For Sale, Wanted or Rent

EUCLIDS

Scrapers—4 and 6 wheel
Bottom Dumps—late model
TC 12 Crawler Tractor

Low cash price for pre-winter clearance.

EXCEPTIONAL VALUES

All offered subject to prior sale or disposition.

Details and prices call or write:

L. B. SMITH, INC. Syracuse, N. Y. Phone GR 5-2196

We do a Nation-wide business in

STEEL SHEET PILING

IMMEDIATE SHIPMENT

815 pcs. 75 to 30 ft. Both. SP-6a—New York
100 pcs. 62 ft. Both. ZP-32—Connecticut
103 pcs. 80 ft. MZ-27—Tennessee
150 pcs. 60 ft. SP-4—W. Virginia
290 pcs. 60 to 30 ft. M-16 & M-115—Tennessee
370 pcs. 60 to 30 ft. M-115 & M-116—Indiana
150 pcs. 34-30 ft. M-116—Michigan
81 pcs. 25 ft. M-115—Mississippi
220 pcs. 15 ft. M-115—Missouri
Other lengths and sections at various locations. Storage yards at CHICAGO, BUFFALO & MEMPHIS.
Also 10" x 42# and 12" x 53# BP 60' in stock.

PILE DRIVING EQUIPMENT

VULCAN AND McKIERNAN-TERRY
PILE HAMMERS & EXTRACTORS
All Sizes—For Rent & Sale—Immediate Shipment

MISSISSIPPI VALLEY EQUIPMENT CO.
1908 Railway Exchange Bldg.
St. Louis 1, Mo. CHestnut 1-4474

FOR SALE

2 Ingersoll Rand 600 Gyro Flo Portable Air Compressors, GM 6-71 Diesel Engines—1, 7:50 x 16 Tires—Serial Nos. 11760 & 11767.
1 Rex Model 200 Double Pumpcrete Powered by a Model 6 MZA 203J Waukesha Gasoline Engine—Skid Mounted—Incl. Rex Pugmill Remixer— with 300' of 8" Pipe and Accessories. S/N CPD-316.

ALL IN TOP CONDITION
CONSTRUCTION EQUIPMENT CO.
21720 West 8 Mi. Rd. Southfield, Mich.

PIPE

Surplus New & Used

FOR SALE, WANTED OR RENT

FOR SALE

1—Used Lima Model 1201, New Cummins Engine and Undercarriage Rebuilt in 1958

1—Used Garwood Buckeye Trencher Model 407. New in 1958

1—Used Manitowoc 3900

1—Used Manitowoc 3500

MANITOWOC-FORSYTHE CORPORATION
37-11 Vernon Blvd.—EXeter 2-6125
Long Island City 1, New York

H & SHEET STEEL PILING

3700 PCS. BETH. SP8A, 50' 50' & 48' & 40' & 35'
1900 PCS. MP112—12', 25', 35', 40' & 60'
850 PCS. BETH.—AP3 20', 25', 30', 35', & 60'
790 PCS. BETH.—DP2—31' 35' 40' 50' 60'
1200 PCS. ZP38-ZP32—25' 30' 50' 60' & 65'
1300 PCS BP10 BP12—BP 14—55' to 60'
400 PCS. BETH. ZP27—25', 30', 35' & 40'

PILING BOUGHT—SOLD—RENTED
STOCKS: N. Y.—BOSTON—BUFFALO
TORONTO—BALTIMORE—JACKSONVILLE
CLEVELAND—RICHMOND—NEW ORLEANS

DIESEL LOCOMOTIVE
12—Gen. Elec. 100, 80, 65, 45, 25 & 23 ton
25 Ton New Whitcomb Diesel Elec.

5 WHIRLEY CRANES
4—50 Ton Elec. 150' Boom 85' Gantry
2—50 Ton, 1—28 Ton 100' Boom, Steam

R. C. STANHOPE, INC.
60 E. 42nd St. N. Y. 17, N. Y.
Telephone MU 2-3075 or MU 2-1898

Call: HYACINTH 7-4900

PIPE, VALVES & FITTINGS

PILING • CULVERTS
ASBESTOS-CEMENT PIPE • ALUMINUM PIPE

ALBERT PIPE SUPPLY CO., Inc.
103 VARICK AVE., BROOKLYN 37, N.Y.

AVAILABLE EQUIPMENT FOR SALE

2—2400 Lima Shovels, 2 highlift fronts, 1 standard front, Serial Numbers 324910, 32932
2—80-D Northwest Shovels, Serial Numbers 12774, 13186
2—TS-24 Euclid Motor Scrapers, Serial Numbers 26839, 26840, New 1958.
4—Model 65 TD Euclid Trucks, Serial Numbers 27876, 27877, 27878, 27879. 4 months old.
4—International 95 Payhaulers, Serial Numbers 677, 687, 696, 697
10—Model 2FD, 5FD, 27FD Euclids. Fair cond.
6—D-8 Tractors, 225 C.C.U., 8-A Blades, Serial Numbers 2U6233, 8162, 9720, 13645, 17002, 19142.

ALL EQUIPMENT IN FIRST CLASS OPERATING CONDITION
Central Pennsylvania Quarry, Stripping & Construction Co.
270 South Pine St., Hazleton, Penna.
Phone GLadstone 4-3551

ASSOCIATED PIPE & FITTING CO., INC.

PILING PIPE SHELLS MANDREL FITTINGS
"H" BEARING PILE SLEEVES AND SHOES
K & M ASBESTOS CEMENT PIPE
CULVERTS CIRCLE ARCH SECTIONAL

262 RUTHERFORD BLVD., CLIFTON, N.J. • PR 3-8400

PILING IN SOUTH

200 pcs. 10 in. 42 lb. 12 in. 53 lb. 60' BP
900 pcs. M115, M116, DP2, 12' to 60'
E4 Extractor & B3 Hammer
Stocks Jax—Miami—New Orleans—Tampa

THE SEABOARD STEEL CORP.
Tel. Ringling 7-0461 P. O. Box 5071 Sarasota, Fla.

STEEL PIPE up to 48" O.D.

WELDING FITTINGS
FLANGES • VALVES

The IDEAL SUPPLY CO.

445 Communipaw Ave.
Jersey City, N. J., DElaware 3-2600
New York Phone: Digby 9-2454

FOR SALE

48B Bucyrus Erie Shovel, diesel 2½ c.y.
3540' 9" x 9" road forms
1800' 11" x 13" airport forms
2500' 16" x 12" airport forms

WILLIAMS CONSTRUCTION COMPANY
Box 5045 Balto. 20, Md. Murdock 6-1000

H BEARING PILES

10 in. 42 lb. 60' lengths
12 in. 53 lb. 60' lengths
8 in. 36 lb., 10 in. 57 lb., 14 in. 73 lb., 14 in. 89 lb. 10' to 70'

BUFFALO, PHILADELPHIA, JACKSONVILLE
R. C. STANHOPE, INC.
Telephone MU 2-3076 or MU 2-1898
60 E 42nd St. New York 17, N. Y.

DAVIDSON

PIPE SUPPLY CO. INC.

Seamless and Welded Steel Pipe
Fittings, Valves, Pipe Fabricating

Call GEdney 9-6300
50th St. & 2nd Ave., B'klyn 32, N. Y.

FOR SALE

1—1955 Haiss Heavy Duty Bucket Loader

Type—Wheel mounted—4 wheel drive Model —135 W-4
Size—8 cubic yards per minute rated capacity.

GOTHAM SAND & STONE CORPORATION
Box 269 Port Washington, New York PO7-3860

PROFESSIONAL SERVICES

MIDDLE ATLANTIC

Airport Fueling Systems, Inc.
Specialists in Liquid Handling Systems
1212—18th Street, N.W.
Washington 6, D. C.

Howard, Needles, Tammen & Bergendoff
Consulting Engineers
Bridges, Structures, Foundations,
Express Highways
Administrative Services
Kansas City - Cleveland - New York

E. Lionel Pavlo
Consulting Engineer
Design, Supervision, Reports
Bridges, Highways, Expressways
Marine Structures, Public Works
Industrial Construction, Airports
642 Fifth Ave. New York 19, N. Y.

Lawrence S. Waterbury
Consulting Engineer
Bowling Green 9-9298
26 Broadway New York 4

Steinman, Boynton, Gronquist & London
Consulting Engineers
HIGHWAYS - BRIDGES - STRUCTURES
117 Liberty St., New York 6, N. Y.

Severud-Elstad-Krueger-Associates
Consulting Engineers
Structural Design - Supervision
Reports - Buildings - Airports
Special Structures
415 Lexington Ave., New York 17, N.Y.

Lockwood, Kessler & Bartlett, Inc.
Engineers *Surveyors*
Civil Engineering Investigations, Reports and Designs, Supervision of Construction. Cadastral, Geodetic, Topographic & Engineering Surveys, Photogrammetric Engineering and Mapping.
One Aerial Way Syosset, N. Y.

Modjeski and Masters
Consulting Engineers
Bridges and other Structures
Foundations
Highway and Expressways
900 North Sixth St. Harrisburg, Pa.
Philadelphia - Miami - New Orleans

Robert W. Lowry, Inc.
Consulting Engineers
Investigations, Reports, Supervision, Airports, Highways, Expressways, Bridges, Structures, Prestressed Design Strengthening, Soil Engineering Sewerage & Water Systems,
Principal Offices
227 Pine Street, Harrisburg, Penna.

Michael Baker, Jr., Inc.
Consulting Engineers, Civil Engineers, Planners & Surveyors; Airports & Highway Design; Water Works & Sewerage Design & Operation; Aerial Topo Maps; Surveys; Reports & Investigations; Irrigation. Home Off.—Rochester, Pa. Br. Off.; Jackson, Miss.; Harrisburg, Pa.; College Park, Md.

Buchart Engineering Corp.
Consulting Engineers
Highways - Bridges - Sewer Systems
Surveys - Water Works - Dams - Reports
Supervision - Industrial - Municipal Structures
55 S. Richland Ave., York, Pa.
Lancaster, Pa. Washington, D. C.

SOUTH

Rader and Associates
Engineers - Architects
Sewage Disposal, Water Works, Ports, Airports, Bridges, Highways, Office and Commercial Buildings, Industrial Plants, Reports, Investigations, Consultations, Aerial Photography, Photogrammetry.
First Nat'l Bank Bldg., Miami 32, Fla.

When you need a SPECIALIST in a hurry . . .
Engineering News-Record's Professional Service Section offers the quickest, most direct method of contacting consultants who may be available NOW.

MIDDLE WEST

Consoer, Townsend & Associates
Consulting Engineers
Sewage treatment, sewers, storm drainage, flood control—Water supply and treatment—Highway and bridges—Airports—Urban renewal—Electric and gas transmission lines—Rate studies, surveys and valuations—Industrial and institutional buildings.
360 East Grand Ave. Chicago 11, Ill.

Roy B. Everson
S.E. Consultant Since 1900
For Purification Systems as applied to Sewage Treatment, Water Works and Swimming Pool Circulating Systems.
A New System for Automatic Control
211 W. Huron St. Chicago 10, Ill.
Phone SUperior 7-3339

Sargent & Lundy
ENGINEERS
Steam and Electric Plants
Utilities—Industrials
Studies—Reports—Designs
Supervision
Chicago

Toledo Testing Laboratory
Engineers—Chemists
Concrete — Soils — Asphalt
Inspection Research
Tests Development
Foundation Investigation
Borings — Diamond Drilling — Load Tests
Soils Mechanics Laboratory
1810 North 12th St. Toledo 2, Ohio

Photronix, Inc.
offering an integrated process of
AERIAL PHOTOGRAMMETRY
AND
ELECTRONIC COMPUTATION
For Engineers, By Engineers
790 King Ave. Columbus 12, Ohio

AERIAL SURVEYS

Aerial Map Service Co.
Topographic, Planimetric, Photo Maps for Highways, Mining, Resources, Construction. City Maps, Tax Maps, Photo Geology, Tellurometer Radio Distance Measurements. Triangulation, Electronic Computation.
1016 Madison Ave., Pittsburgh 13, Pa.

American Air Surveys, Inc.
AERIAL TOPOGRAPHIC MAPS & AERIAL PHOTOS FOR
• Highways • Airports • Power & Pipe Lines • Railroads • Mining • All types construction • Stockpile Inventories
907 Penn Ave. Pittsburgh 22, Pa.
A NATIONWIDE SERVICE

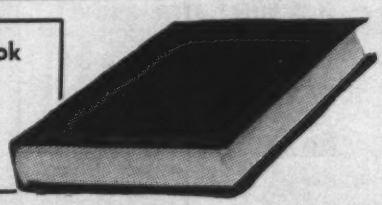
Clyde E. Williams & Assoc., Inc.
Aerial Photos - Enlargements
Topographic Maps
At large and particular scales to suit various engineering needs, e. g. Airports, City Sewer & Water, Power & Pipe lines, Reservoirs, Subdivisions, Highways, Bridges & Inventories.
313 W. Colfax Ave. South Bend, Ind.

THE CONSULTING ENGINEER
By reason of special training, wide experience and tested ability, coupled with professional integrity, the consulting engineer brings to his client detached engineering and economic advice that rises above local limitations and encompasses the availability of all modern developments in the fields where he practices as an expert.

CLASSIFIED ADVERTISERS INDEX

Albert Pipe Supply Company..... 119
Associated Pipe & Fitting Co..... 119
Bailey Bridge Rentals & Eqpt..... 118
Central Pennsylvania Quarry, Shipping & Construction Co..... 119
Conmaco Inc. 119
Connors Steel Div. of H. K. Porter Company..... 118
Construction Equipment Co..... 119
Davidson Pipe Supply Co. Inc..... 119
Evdel Industries 118
George, Wally E..... 117
Gotham Sand & Stone Corp..... 119
Ideal Supply Company, Inc..... 119
Kelliher Company, M. S. 119
Maccabee, Campbell & Assoc..... 117
Madison, City of..... 117
Manitowoc-Forsythe Corp..... 119
McKee & Company, Arthur G..... 117
Midwest Steel Corporation..... 118
Mississippi Valley Equipment Co.... 119
National Blue Print Company..... 118
National Schools of Construction.... 118
Prairie Constructors 118
Seaboard Steel Corporation..... 119
Service Supply Corporation..... 117
Smith Company, L. B. 118-119
Stanhope Inc. R. C. 119
Sverdrup & Parcel Engineering Co... 117
Tennessee Valley Authority..... 116
Upjohn Company 117
Williams Construction Company..... 119
Wilson Engineering Corporation..... 118

Now—ONE comprehensive book
covers every major phase of
building design and construction



Here at last is that one volume you need to see you through any project connected with building design and construction. Every decision can be made with economy and dispatch with this Handbook at your side. For the supplier, engineer, owner, architect, or contractor, here is the master key to building problems!

BUILDING CONSTRUCTION HANDBOOK

Prepared by a Staff of Specialists

FREDERICK S. MERRITT
Editor-in-Chief
Senior Editor, *Engineering News-Record*

FREE EXAMINATION COUPON

McGRAW-HILL BOOK CO., Dept. ENR-1-14
327 W. 41 St., New York 36, N. Y.

Send me Merritt's **Building Construction Handbook for 10 days' examination** on approval. In 10 days I will (check one) ☐remit $15.00 plus few cents delivery costs; or ☐ $5.00 in 10 days and $5.00 a month until $15.00 is paid. Otherwise, I will return book postpaid. (We pay delivery costs if you remit with order; same examination and return privilege.)

PRINT
Name .....
Address .....
City..... Zone..... State.....
Company ..... Position .....
For price and terms outside U.S., write McGraw-Hill Int'l., N.Y.C. 36 ENR-1-14

851 pages, 6 x 9, 183 tables, 428 illustrations, $15.00

EASY TERMS Pay $5.00 in 10 days, then $5.00 monthly

ADVERTISERS IN THIS ISSUE

Acker Drill Co., Inc. 75
Allied Chemical Corp., Plastics & Coal Chemicals Div. 107
Allis-Chalmers 1, 73
Allison Div., General Motors Corp. 80-81
America Fore Loyalty Group 63
American Foreign Insurance Association .. 13
Armco Drainage & Metal Products, Inc. ..... 2nd Cover
Automotive & Aircraft Div., American Chain & Cable Company, Inc. 64

Barber-Greene Co. 102-103
Bay City Shovels, Inc. 28
Bethlehem Steel Co. 50
Borden Metal Products Co. 20
Broderick & Bascom Rope Co. ..... 4th Cover

Chicago Pneumatic Tool Company 70-71
Cleveland Tramrail Div., Cleveland Crane & Engineering Co. 76
James B. Clow & Sons, Inc. 54
Clyde Iron Works, Inc. 62
Columbia-Southern Chemical Corp. 33
Committee on Steel Pipe Research 78
Concrete Reinforcing Steel Institute 77

The Deming Co. 121
E. I. du Pont de Nemours & Co., Inc., Explosives Dept. 55

The Eimco Corporation ..... 3rd Cover
Elgood Equipment Corp. 68
Euclid Div., General Motors Corp. 57-60

L. B. Foster Co. 18

GMC Truck & Coach Div., General Motors Corp. 85-90
Grid Flat Slab Corporation 47

Hendrix Mfg. Co., Inc. 109
Homelite Div., Textron Inc. 65
The Frank G. Hough Co. 36-37
Huber-Warco Company 96-97

Inland Steel Products Company 112
Ironite Company 46

Lehigh Portland Cement Company 52
Lock Joint Pipe Co. 16

Mack Trucks, Inc. 48-49
The R. C. Mahon Company 66-67
Manitowoc Engineering Corp. 4-5
Mayo Tunnel & Mine Equipment 68

National Clay Pipe Manufacturers, Inc. 41
New England Carbide Tool Co. 8
Northern Gravel Company 91

Phoenix Bridge Company 72
Precision Instruments Inc. 68
The Prescon Corporation 72

Raymond International, Inc. 3
Richmond Screw Anchor Co., Inc. 2
John A. Roebling's Sons Corp. 69

Sauerman Bros., Inc. 93
Servicised Products Corp. 34
Socony Mobil Oil Co., Inc. 14-15
Sprague & Henwood, Inc. 61
John W. Stang Corp. 77

E. A. Thompson Co., Inc. 56
Twin Disc Clutch Co. 74

Union Wire Rope Corp. 42-43
U. S. Pipe & Foundry Company 6-7
Universal Form Clamp Co. 35

Vascoloy-Ramet Corporation 99

The Weinman Pump Mfg. Co. 51
Westinghouse Electric Corp., Apparatus Div. 9-12
Wild Heerbrugge Instruments, Inc. 100

Yuba Consolidated Industries, Inc. 101

Zonolite Company 75

Professional Services 120

CLASSIFIED ADVERTISING

F. J. Eberle, Business Mgr.

Employment Opportunities ..116, 117
Notices
Proposals 113, 114, 115
Equipment
(Used or Surplus)
(For Rent, Sales Wanted) .. 118, 119
Advertiser's Index 120

ENGINEERING NEWS-RECORD

330 West 42 St., New York 36—LOngacre 4-3000

ABP Member ABC

Number of copies of this issue printed 85,392

D. S. ROBERTSON, Advertising Sales Manager
HUGH J. CARLSON, Assistant Business Manager

ADVERTISING REPRESENTATIVES

Atlanta, 3—Rhodes-Haverty Bldg., Robert H. Powell, Jr.
Chicago, 11—520 No. Michigan Ave. L. H. Hunt, W. G. Payne, Earl S. Moore, Jr.
Cleveland, 13—1164 Illuminating Bldg., 55 Public Square H. A. Bergstrom, P. P. DiTero
Dallas, 1—Vaughn Bldg., 1712 Commerce St., Robert T. Wood
Denver, 2—Tower Building, 1700 Broadway J. W. Patten
Detroit, 28—Penobscot Bldg., R. I. Mace
Los Angeles, 17—1125 W. Sixth St., Knox Bourne, S. S. Tiebout
New York, 36—500 5th Ave. C. D. Woulen, H. T. Olsen Robert L. Barker
Philadelphia, 3—Six Penn Center Plaza D. G. Jensen Patrick Kelleher
Pittsburgh, 22—1111 Oliver Bldg., M. Russell
St. Louis, 8—Continental Bldg., E. B. Mingle, Jr.
San Francisco, 4—68 Post St. J. W. Otterson, R. C. Alcorn

OTHER SALES OFFICES:

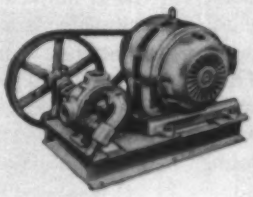
Boston 16—350 Park Square Bldg., United Kingdom, Edward E. Schirmer, 95 Farringdon St., London E.C. 4.—Germany, Austria, Stan Kimes, 85 Westendstrasse, Frankfort/Main, Germany—Switzerland, Italy, France and Belgium, Michael R. Zeynel, 2 Place du Port, Geneva, Switzerland

NOW...FOR GENERAL INDUSTRIAL USE

DEMING ROTARY PUMPS

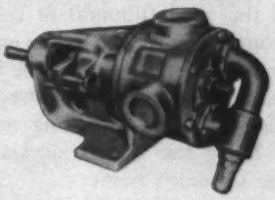
FOR HANDLING

SOLVENTS • FUEL OILS • LUBRICATING OILS • CHEMICALS • ALKALIES



The complete Deming Rotary Pump line is now available in sizes ranging from ⅜" through 8" for pressures to 200 lbs. and capacities to 1050 gallons per minute.

You'll want to know more about the Deming Rotary Pump line! Send today for complete descriptive literature.



The DEMING Co.

804 BROADWAY • SALEM, OHIO

Send me Literature on the Deming Rotary Pump Line.

NAME_____

COMPANY_____ POSITION_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

The Steel Settlement

THE BEST THING that can be said about the settlement of the steel strike is that another one shouldn't occur for 2½ years. The only other noteworthy satisfaction is that the price rise necessary to offset the new wage and fringe benefit costs is estimated at half or less of the $18-a-ton-rise in construction steel that occurred after the last such labor-management contract. Beyond that the results of the settlement are largely negative (see p. 24, 110).

The steel companies made no progress toward their main objective of increasing productivity by revision of work rules; this is an ill omen for construction contractors who had hoped that their unions might be amenable to a reduction in featherbedding practices as an aid to increased productivity.

The government negotiators demonstrated their inability to exact a balanced settlement since the unions got 90% of their demands and the steel companies almost none of theirs. Thus construction contractors who had hoped that an inflation-conscious Administration would do better must enter their own wage negotiation sessions without any psychological help from that quarter.

In the meantime the steel settlement probably means that products and equipment made of steel will go up in price. Even though basic steel prices are not raised immediately, elimination of discounts and other adjustments can make certain steels cost more.

All in all, construction's task remains unchanged by the steel settlement: To offset rising material and labor costs by more efficient designs and better construction procedures.

Reason to Rejoice

THE HOLING THROUGH of a tunnel, the topping out of a building, the closure of a span or a dam—these are some of the great triumphs of construction. These are the moments of victory, as the engineered project is brought to the limit of its length, breadth or height. These are the moments for construction men to rejoice, to rest and relax, before tackling completion of their task—be it lining the tunnel, decking the bridge or enclosing the building's frame.

Last week, constructors who have worked four years in the Catskill Mountains of New York State achieved such a victory as they holed through the 44-mile West Delaware Tunnel to extend New York City's water system (p. 21). Now there is daylight through the mountains where water will some day flow, 310 million gallons of it daily, toward a city nearly 100 miles away.

Construction men everywhere will rejoice with the designers and owners of this great, deep-rock tunnel—exceeded in length only by the daddy of them all, the 85-mile Delaware Aqueduct into which it feeds—that it was holed through months ahead of schedule, with the contractors that their pioneering of a new tunneling method was successful and that they made a profit; and with the miners and other laborers that this most dangerous of construction operations was completed in relative safety. West Delaware is a triumph all around.

A City's Future

ZONING CODES, which provide the guide lines for a city's future, are recognized as among the most important of municipal documents. When, therefore, burgeoning urban growth made most existing codes obsolete, many U.S. cities, but by no means all and notably not New York City, developed new codes having guide lines consonant with present and future needs. Now New York is considering a new code, and what it does and how it does it, will have wide interest since the city's old code was often used as a model.

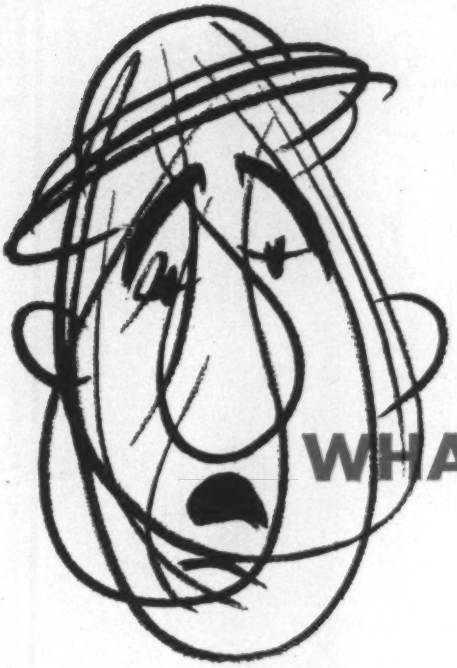
This new zoning code for New York City, presently approaching the stage of public discussion, finds real estate interests, builders and planners badly divided. At this stage of the discussions, of course, differences of opinion are not fatal, and may prove useful. But a spirit of compromise must eventually emerge, for the city needs a new code to fit itself for the future. The code that has been proposed is soundly conceived and carefully drawn. It can be changed, but it should not be scuttled.

The proposed code was developed by the architectural firm of Voorhees Walker Smith Smith & Haines for the City Planning Commission (ENR Feb. 19, 1959, p. 27). Real estate men, developers, construction firms and mortgage lenders generally fear its tougher zoning regulations would discourage construction in the city. Architects, city planners and various civic betterment groups generally favor the preliminary plan.

It is unfortunate that these various groups, all with legitimate interest and all able to make important contributions to the future of the city, should now be so far apart. Certainly, New York City needs a new zoning code. Its present code was a pioneer when it came into effect back in 1916. Now it is aging and creaky under the weight of 2,500 amendments.

It is understandable that real estate men and builders, still enjoying the fruits of New York's postwar building boom, should balk almost reflexively at any proposal that would alter present rules and conditions. But they should not be shortsighted, for their own best interests lie in a city that remains pleasant to live in and efficient to work in.

It will be equivalent to a step backward if the good work of the City Planning Commission's consulting architects is undone by needless controversy. A sensible compromise is needed among the interested groups.



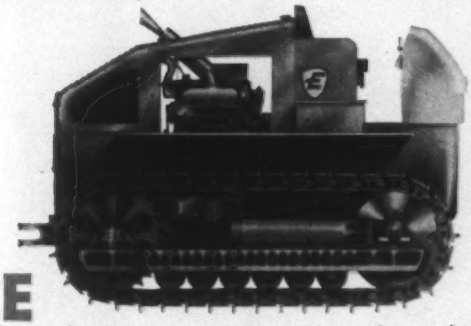
WHAT'S THE DIFFERENCE IN TRACTORS

YOU'LL BE SURPRISED!

Send for comparative Fact Sheet, showing vital statistics of the great

EIMCO 103

tractor series as compared with other leading makes.



WHAT A DIFFERENCE

Eimco advanced engineering and quality craftsmanship makes!

Write to The Eimco Corporation, P.O. Box 300, Salt Lake City 10, Utah for Fact Sheet and Specifications on these new 100 HP Crawler-Tractors, engineered and built as only Eimco can build them . . . to fit your jobs, and needs.

Eimco 103 Tractor and Dozers
Eimco 123 Front End Loader
Eimco 133 Steel Mill Front End Loader
Eimco 143 Log Loader

"ADVANCED ENGINEERING AND QUALITY CRAFTSMANSHIP SINCE 1884"

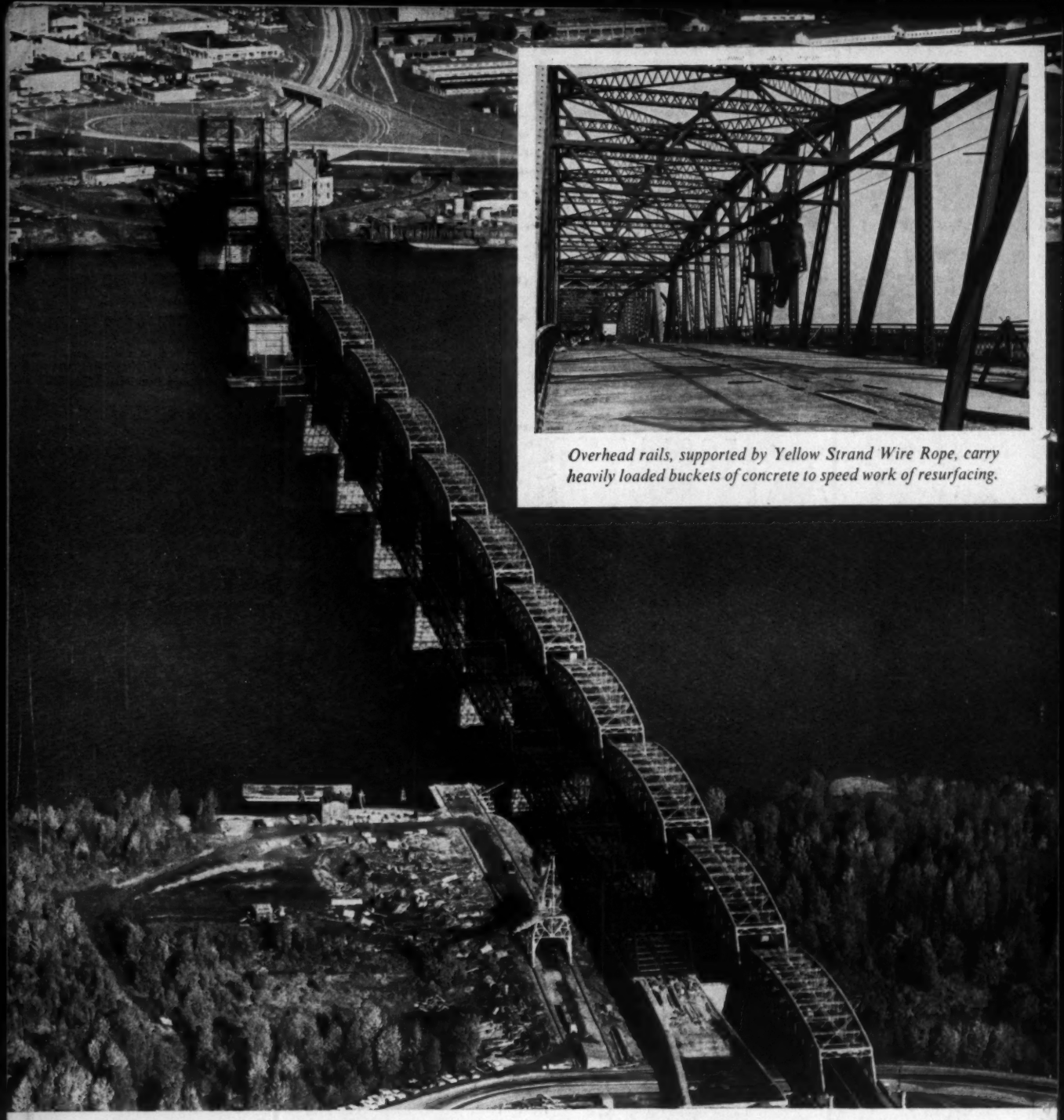
THE EIMCO CORPORATION

EIMCO

TRACTOR LOADER DIVISION

634 SOUTH 4TH WEST
SALT LAKE CITY, UTAH — U.S.A.

EXPORT OFFICE: 51 - 52 SOUTH STREET, NEW YORK, N. Y.
BRANCHES AND DEALERS IN PRINCIPAL CITIES THROUGHOUT THE WORLD



Overhead rails, supported by Yellow Strand Wire Rope, carry heavily loaded buckets of concrete to speed work of resurfacing.

They raised a bridge over the Columbia River at Portland, Ore.

Interstate Highway #99 connecting Portland and Vancouver called for 8-lane traffic over the river. To save money, a new 4-lane bridge was constructed to match an original bridge which has been in service since 1917. The old bridge had to be raised to match the height of the new one.

General Construction Co. of Portland was awarded the job of raising and "face lifting" the old bridge. This contractor selected Yellow Strand Wire Rope for heavy lifts and for supporting critical loads.

Successful contractors know they can depend on Yellow Strand Wire Rope for every job. You can, too! Call your Yellow Strand Distributor. Broderick & Bascom Rope Co., 4203 Union Blvd., St. Louis 15, Missouri.

Yellow Strand®

WIRE ROPE SLINGS CLIPS